grass valley
A BELDEN BRAND

# SSP-3801

HD/SD SOLID STATE PLAYOUT CARD

# Installation and Configuration Guide

M931-9905-140

10 June 2015

www.grassvalley.com

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|---|---|
| Title | SSP-3801 Installation and Configuration Guide |
| Part Number | M931-9905-140 |
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# Important Safeguards and Notices

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

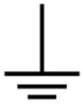
## Symbols and Their Meanings

Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

Indicates that the user, operator or service technician should refer to the product manuals for important operating, maintenance, or service instructions.

This is a prompt to note the fuse rating when replacing fuses. The fuse referenced in the text must be replaced with one having the ratings indicated.

Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.

Indicates that static sensitive components are present, which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.

The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Canadian Standard Association (CSA) regulations and recommendations for USA/Canada.

The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA/Canada.

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The presence of this symbol in or on Grass Valley product means that it complies with all applicable European Union (CE) directives.

The presence of this symbol in or on Grass Valley product means that it complies with safety of laser product applicable standards.

## Warnings

A warning indicates a possible hazard to personnel, which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the mains voltage at either 120 V AC or 240 V AC.
- This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for 120 V AC or 240 V AC is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

## Cautions

A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- This equipment is meant to be installed in a restricted access location.

- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.
- Do not operate with suspected equipment failure. If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel. Servicing should be done in a static-free environment.
- This unit may have more than one power supply cord. Disconnect all power supply cords before servicing to avoid electric shock.
- Follow static precautions at all times when handling this equipment.

## Electrostatic Discharge (ESD) Protection

Electrostatic discharge occurs when electronic components are improperly handled and can result in intermittent failure or complete damage adversely affecting an electrical circuit. When you remove and replace any card from a frame always follow ESD-prevention procedures:

- Ensure that the frame is electrically connected to earth ground through the power cord or any other means if available.
- Wear an ESD wrist strap ensuring that it makes good skin contact. Connect the grounding clip to an *unpainted surface* of the chassis frame to safely ground unwanted ESD voltages. If no wrist strap is available, ground yourself by touching the *unpainted* metal part of the chassis.
- For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms.
- When temporarily storing a card make sure it is placed in an ESD bag.
- Cards in an earth grounded metal frame or casing do not require any special ESD protection.

## Recycling

Visit www.grassvalley.com for recycling information.

# Certification and Compliance

## Restriction on Hazardous Substances (RoHS)

| SSP-3801 | 有毒有害物质或元素 (Toxic or hazardous Substances and Elements) | | | | | |
|---|---|---|---|---|---|---|
| 部件名称 Part name | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr6) | 多溴联苯 (PBB) | 多溴二苯 (PBDE) |
| 电路模块 Circuit Modules | X | O | O | O | O | O |

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 规定的限量要求以下。

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 规定的限量要求。

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006.

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Technical explanations:

This statement is based on the information provided by our suppliers of components and collected through our Grass Valley's environmental management system. Grass Valley believes this environmental information to be correct but cannot guarantee its completeness or accuracy as it is based on data received from sources outside our company. All specifications are subject to change without notice.

## Electromagnetic Compatibility

This equipment has been tested for verification of compliance with FCC Part 15, Subpart B requirements for class A digital devices.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This equipment has been tested and found to comply with the requirements of the EMC directive 2004/108/EC:

- EN 55022 Class A Radiated and conducted emissions
- EN 61000-3-2 Limits for harmonic current emissions
- EN 61000-3-3 Limitation of voltage fluctuations and flicker
- EN 61000-4-2 Electrostatic discharge immunity
- EN 61000-4-3 Radiated, radio-frequency, electromagnetic field immunity
- EN 61000-4-4 Electrical fast transient immunity

- EN 61000-4-5 Surge transient immunity
- EN 61000-4-6 Conducted disturbances immunity
- EN 61000-4-8 Power frequency magnetic field immunity
- EN 61000-4-11 Voltage dips, short interruptions and voltage variations immunity

# Mesures de sécurité et avis importants

La présente section fournit des consignes de sécurité importantes pour les opérateurs et le personnel de service. Des avertissements ou mises en garde spécifiques figurent dans le manuel, dans les sections où ils s'appliquent. Prenez le temps de bien lire les consignes et assurez-vous de les respecter, en particulier celles qui sont destinées à prévenir les décharges électriques ou les blessures.

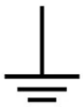
## Signification des symboles utilisés

Signale la présence d'une tension élevée et dangereuse dans le boîtier de l'équipement ; cette tension peut être suffisante pour constituer un risque de décharge électrique.

Avertit l'utilisateur, l'opérateur ou le technicien de maintenance que des instructions importantes relatives à l'utilisation et à l'entretien se trouvent dans la documentation accompagnant l'équipement.

Invite l'utilisateur, l'opérateur ou le technicien de maintenance à prendre note du calibre du fusible lors du remplacement de ce dernier. Le fusible auquel il est fait référence dans le texte doit être remplacé par un fusible du même calibre.

Identifie une borne de mise à la terre de protection. Il faut relier cette borne à la terre avant d'effectuer toute autre connexion à l'équipement.



Identifie une borne de mise à la terre externe qui peut être connectée en tant que borne de mise à la terre supplémentaire.

Signale la présence de composants sensibles à l'électricité statique et qui sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.

Le symbole ci-contre signifie que l'appareil comporte plus d'un cordon d'alimentation et qu'il faut débrancher tous les cordons d'alimentation avant toute opération d'entretien, afin de prévenir les chocs électriques.

La marque C-CSA-US certifie que l'appareil visé a été testé par l'Association canadienne de normalisation (CSA) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

La marque C-UL-US certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

La marque ETL Listed d'Intertek pour le marché Nord-Américain certifie que l'appareil visé a été testé par Intertek et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

Le marquage CE indique que l'appareil visé est conforme aux exigences essentielles des directives applicables de l'Union européenne en matière de sécurité électrique, de compatibilité électromagnétique et de conformité environnementale.

Le symbole ci-contre sur un appareil Grass Valley ou à l'intérieur de l'appareil indique qu'il est conforme aux normes applicables en matière de sécurité laser.

## Avertissements

Les avertissements signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire fatales. Veuillez vous familiariser avec les avertissements d'ordre général ci-dessous :

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.
- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.
- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.
- N'utilisez pas cet appareil dans un environnement humide.
- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.
- Acheminez les cordons d'alimentation et autres câbles de façon à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.
- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyants liquides ou en aérosol. Utilisez uniquement un chiffon humide.
- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.

- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).
- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.
- Ne pas utiliser cet appareil dans une atmosphère explosive.
- Présence possible de courants de fuite. Un raccordement à la masse est indispensable avant la mise sous tension.
- Après tout travail d'entretien ou de réparation, faites effectuer des contrôles de sécurité par le personnel technique qualifié.

### Mises en garde

Les mises en garde signalent des conditions ou des pratiques susceptibles d'endommager l'équipement. Veuillez vous familiariser avec les mises en garde ci-dessous :

- L'appareil est conçu pour être installé dans un endroit à accès restreint.
- Au moment d'installer l'équipement, ne fixez pas les cordons d'alimentation aux surfaces intérieures de l'édifice.
- Les produits qui n'ont pas d'interrupteur marche-arrêt et qui disposent d'une source d'alimentation externe doivent être installés à proximité d'une prise de courant facile d'accès.
- Si l'équipement n'est pas pourvu d'un modules d'alimentation auto-adaptables, vérifiez la configuration de chacun des modules d'alimentation avant de les mettre sous tension.
- Assurez une ventilation adéquate. Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation.
- N'utilisez pas l'équipement si vous suspectez un dysfonctionnement du produit. Faites-le inspecter par un technicien qualifié.
- Pour réduire le risque de choc électrique, n'effectuez pas de réparations autres que celles qui sont décrites dans le présent manuel, sauf si vous êtes qualifié pour le faire. Confiez les réparations à un technicien qualifié. La maintenance doit se réaliser dans un milieu libre d'électricité statique.
- L'appareil peut comporter plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher tous les cordons d'alimentation avant toute opération d'entretien.
- Veillez à toujours prendre les mesures de protection antistatique appropriées quand vous manipulez l'équipement.

## Protection contre les décharges électrostatiques (DES)

Une décharge électrostatique peut se produire lorsque des composants électroniques ne sont pas manipulés de manière adéquate, ce qui peut entraîner des défaillances intermittentes ou endommager irrémédiablement un circuit électrique. Au moment de remplacer une carte dans un châssis, prenez toujours les mesures de protection antistatique appropriées :

- Assurez-vous que le châssis est relié électriquement à la terre par le cordon d'alimentation ou tout autre moyen disponible.
- Portez un bracelet antistatique et assurez-vous qu'il est bien en contact avec la peau. Connectez la pince de masse à une *surface non peinte* du châssis pour détourner à la terre toute tension électrostatique indésirable. En l'absence de bracelet antistatique, déchargez l'électricité statique de votre corps en touchant une surface métallique *non peinte* du châssis.
- Pour plus de sécurité, vérifiez périodiquement la valeur de résistance du bracelet antistatique. Elle doit se situer entre 1 et 10 mégohms.
- Si vous devez mettre une carte de côté, assurez-vous de la ranger dans un sac protecteur antistatique.
- Les cartes qui sont reliées à un châssis ou boîtier métallique mis à la terre ne nécessitent pas de protection antistatique spéciale.

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# 1 Introduction

This chapter provides an overview of what is included in your SSP-3801 package and as well as an overview of the features of the SSP-3801 card.

This chapter contains the following sections:

*Product overview* . . . . . 2
*Supported media file formats* . . . . . 4
*What's included with your product* . . . . . 6

# Product overview

The Densité SSP-3801is a single card, solid state HD/SD playout server that is housed in the Densité 3RU frame. It is fully integrated with the GV STRATUS Playout cloud-based automation and schedule management service and is equally suitable for deployment at a regional site or within a network operation center. The SSP-3801 card uses solid state storage and broadcast hardware technology, with no reliance on external databases, resulting in low cost of ownership, rock solid reliability, total frame accuracy, simple installation and very low power consumption.

In addition to clip playback, the SSP-3801 card can display still and animated logos, high-quality, pre-rendered graphical sequences and incorporate the output of external graphics devices using a fill and key input.

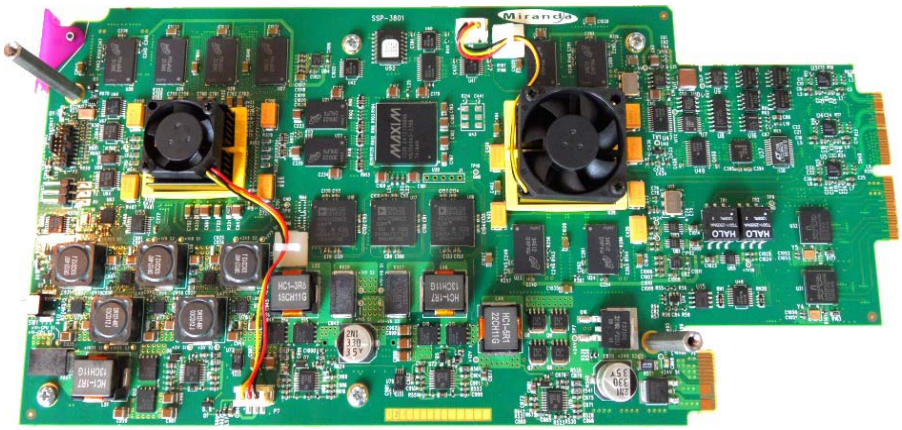



*Fig. 1-1: HD/SD Solid-State Playout card (SSP-3801)*

The card features media storage that uses a unified file format (MXF Op1A) which is compatible with an XDCAM HD or Sony IMX profile, and supports a bit rate of up to 100 Mbit/sec.

## Key Hardware Features

The SSP-3801 is a “broadcast ready” playout solution, it has been designed to include all the functionality to create a rich featured broadcast channel within in single package.

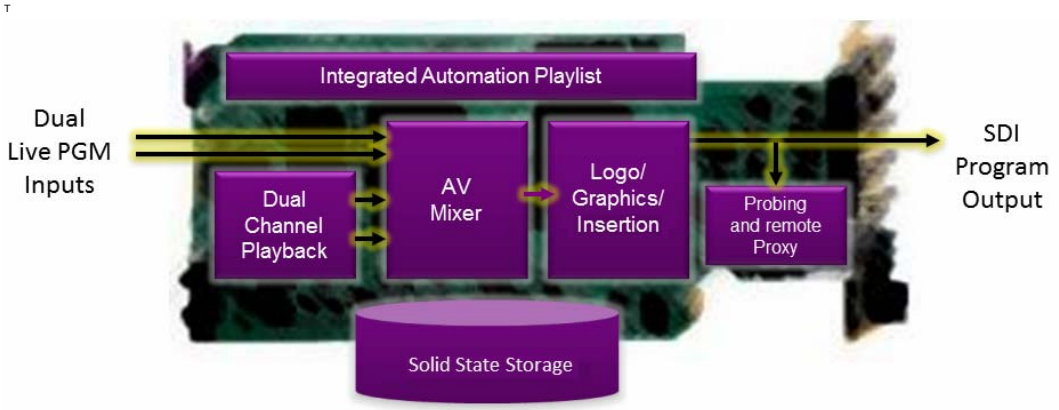



*Fig. 1-2: Component layout of the SSP-3801 card*

Its key hardware features include:

- All inputs and outputs support HD and SD (625, 525, 1080i and 720p at 50 and 59.94 frame rates)
- Frame accurate playback of clip media including video, multichannel audio and ancillary data
- Fully configurable over a network interface and supports backup of configuration data to Densité controller for hot swap functionality
- Solid State disks provide high performance, high reliability storage of HD material and are available in three sizes: 375 GB, 775 GB and 1550 GB
- With its advanced embedded operating system allows the device will boot and can be ready to take to air within 45 seconds

## Key Software Features

The SSP-3801 card is designed to function as a part of the larger GV STRATUS Playout solution and can be deployed in a number of configurations. Its key software features are:

- Full integration with GV STRATUS Playout using secure, open-standard web service protocols to provide playlist input, status updates, thumbnails and alerts
- Provides full web interface for local control
- Supports live events including transitions and pass-through of video, audio and ancillary data
- J2K graphics support
- Built-in voice-over playback support
- Seamless integration with supporting Grass Valley products such as Densité HCO change-over card for main and backup playout applications, plus iControl

## Key Operational Features

One of the design goals of this device was to lower operational costs and allow it to be deployed in remote sites where local support is at a premium. To achieve this goal the following features are available:

- All configuration and management can be provided by the network

- Configuring a new device can be as simple as inserting it into the Densité chassis with all setup information being loaded based on the device location, which can be useful for both new channels and replacing defective ones
- Provisioning and repair operations can be easily be performed with staff without broadcast specific training
- Device will robustly continue to operate during temporary loss of connection to GV STRATUS Playout using previously downloaded playlists or “evergreen” material
- SSP-3801 cards can pull broadcast media from a number of configured locations for maximum resilience and flexibility

## Carriage of ancillary data in clips

The SSP-3801 card can insert vertical ancillary (VANC) data from clips so that data such as closed captions can be played out in sync with the video. VANC data can be carried in clips in one of three ways:

- As a SMPTE 436M data track within the MXF
- As VBI lines encoded in the MPEG2 data (SD only - all Sony IMX files carry 16 lines of VBI)
- As ATSC A/53 closed captions within the MPEG2 elementary stream

The card operates with an “outside-in” model for handling vertical ancillary data. All SD clips must be in the Sony IMX format and will therefore insert the first 16 lines of the MPEG picture into the VBI space on the output. If ATSC A/53 closed captions are present in the MPEG2 elementary stream, these will override 608 closed captions carried in the VBI lines in the MPEG2 picture. If VBI lines are present in SMPTE 436M, this will overwrite the entire line on the output and will consequently override both the MPEG A/53 closed captions and the VBI lines in the MPEG2 Picture.

# Supported media file formats

The SSP-3801 card supports the following formats. If the media files that you want to use are not in a supported format, you can use the GV STRATUS Playout File Processing Node to convert the files and the GV STRATUS Playout Media Import Application to register the media files as assets in the GV STRATUS Playout service. For more information, see the “Managing Assets” chapter of the GV STRATUS Playout Operator Guide.

| Type | Extension | Description |
|---|---|---|
| Off Air slide | OXT | Oxtel Still format |
| Still | OXT | Oxtel Still format |
| Voice-over | WAV | 48kHz multi-channel WAV file (8, 16, 24 or 32 bit)<br>Note: Floating point PCM data is not supported. |
| Graphic | GMJ | Transcoded by the GV STRATUS Playout File Processing Node |
| Logo | • OXT<br>• OXA | • Oxtel Still format<br>• Oxtel Animation format |

| Type | Extension | Description |
|---|---|---|
| Clip | MXF | Op1A XDCAM HD or Sony IMX |
| VANC | VANC | Created by csvanccreate.exe tool. For more information, see VANC Packet Creation Tool in the SSP-3801 User Guide. |

## Clip formats

XDCAM HD and Sony IMX are the only officially supported clip formats. Formats outside of these profiles may function correctly; however, it is recommended that you validate the media you wish to use. The following are the encoding parameters supported by the SSP-3801 card.

### Clip wrapper format

- OP1a MXF wrapper

### Essence types

- Video - MPEG2
  - Any bit rate up to 100Mbits/sec
  - Long GOP or I-Frame only
  - Full frame (SD or HD)
  - Full frame plus 16 lines VBI (as per Sony IMX), SD only
  - Frame coded only (field coded essence is not supported)
  - A/53 MPEG closed captions
- Audio - PCM
  - Up to 16 channels of audio
  - Audio can be presented as any number of multi-channel tracks (1 track of 16 channels, 16 tracks of 1 channel, 8 tracks of 2 channels, and so on)
  - 8-, 16-, 24-, or 32-bit PCM (big endian and little endian supported)
  - Floating point PCM data is not supported
- Ancillary - SMPTE-436M
  - 8-bit VBI lines
    - In luma plane (HD)
    - In chroma plane (HD)
    - Across both luma and chroma (SD)
    - 1-bit and 10-bit VBI lines are not supported
  - 8-bit ancillary packets
    - In luma plane (HD)
    - In chroma plane (HD)
    - Across both luma and chroma (SD)
    - 10-bit ancillary packets are not supported

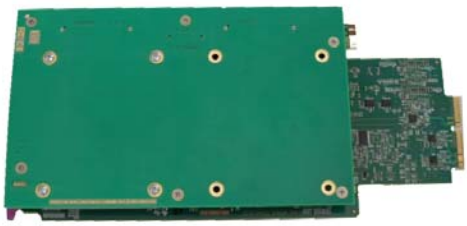
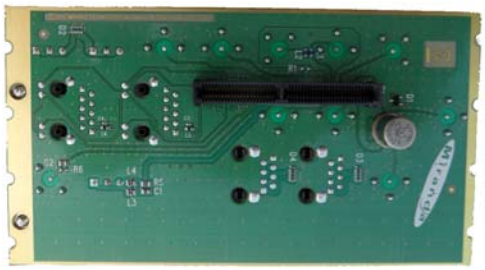
### Supported clip frame sizes

| Video Standard | Frame Width | Frame Height | Frame Rate | Notes |
|---|---|---|---|---|
| 625 | 720 | 576 | 25 | SD/Interlaced, no VBI in picture |
| 625 | 720 | 608 | 25 | SD/Interlaced, VBI encoded in first 16 lines of picture (per field) |
| 525 | 720 | 480 | 29.97 | SD/Interlaced, no VBI in picture |
| 525 | 720 | 512 | 29.97 | SD/Interlaced, VBI encoded in first 16 lines of picture (per field) |
| 1080i/50 | 1920 | 1080 | 25 | HD/Interlaced |
| 1080i/59.94 | 1920 | 1080 | 29.97 | HD/Interlaced |
| 720p/50 | 1280 | 720 | 50 | HD/Progressive |
| 720p/59.94 | 1280 | 720 | 59.94 | HD/Progressive |

## What's included with your product

Each SSP-3801 package consists of two separate hardware components:

- One HD/SD SSP-3801 card
- One SSP-3801 rear connector panel

| Component | Front | Rear |
|---|---|---|
| HD/SD Solid-State Playout card | |  |
| SSP-3801 rear connector panel | |  |

You can also access and download the complete SSP-3801 documentation by entering SSP-3801 in the **Search support files** field on the Support Portal:

http://www.miranda.com/support/software/index

# 2 Overview of the SSP-3801 card

This chapter provides an overview to the SSP-3801 hardware and software components, including functional descriptions.

This chapter contains the following sections:

*About the SSP-3801 card* . . . . . 8
*Densité 3 frame's local control panel* . . . . . 13
*SSP-3801 web interface* . . . . . 14

# About the SSP-3801 card

The SSP-3801 is a playout server card that consists of two circuit boards assembled together:

- The main board carries the bulk of the electronics with connectors that interface with the SSP-3801 rear connector and Densité 3 frame mid-plane.
- The second board is a solid state drive (SSD) carrier board, which features up to two SSDs for application and media storage.

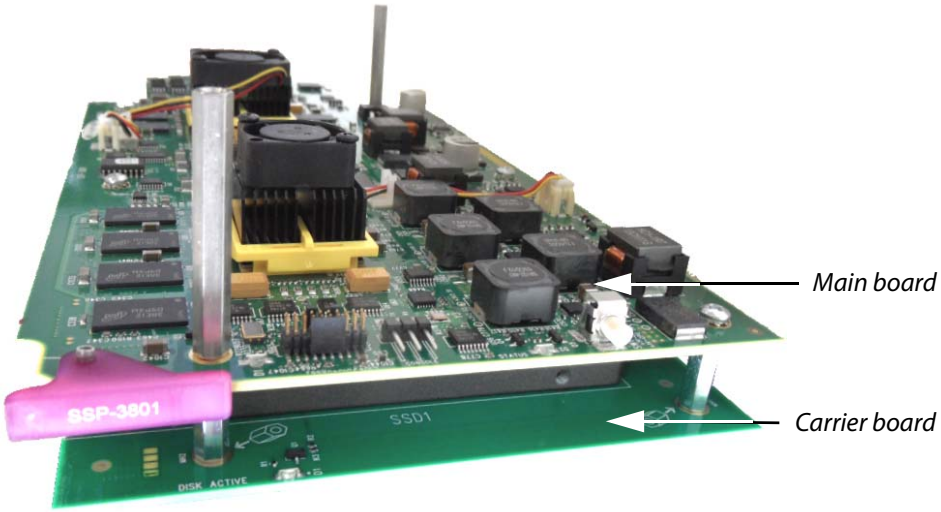



*Figure 2-1. The SSP-3801 card consists of two circuit boards*

The SSP-3801 card has a connector which plugs into a mid-frame motherboard for distribution of power and for connection to the controller card, with a second connector which plugs directly into the rear connector panel for input and output.

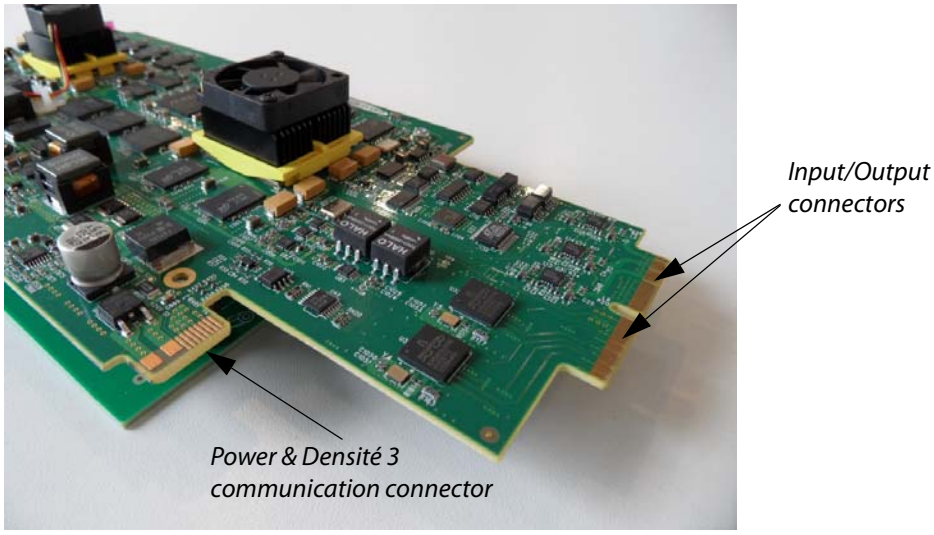



*Figure 2-2. SSP-3801 card connectors*

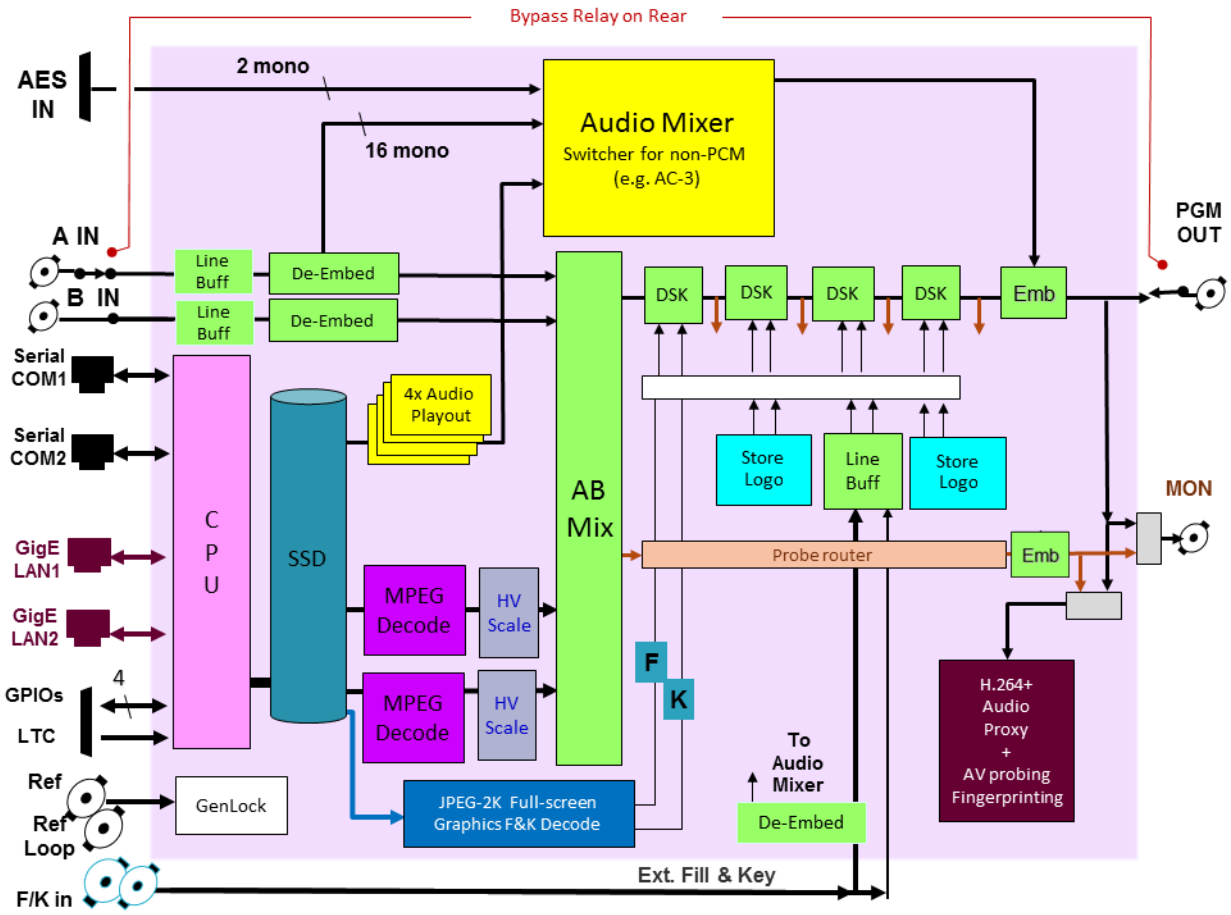



*Figure 2-3. Functional block diagram of the SSP-3801*

## SSP-3801 front card-edge components

The front card-edge features a series of LEDs that indicate card status and operations, as well as provides an interface for testing and button to launch the control panel.

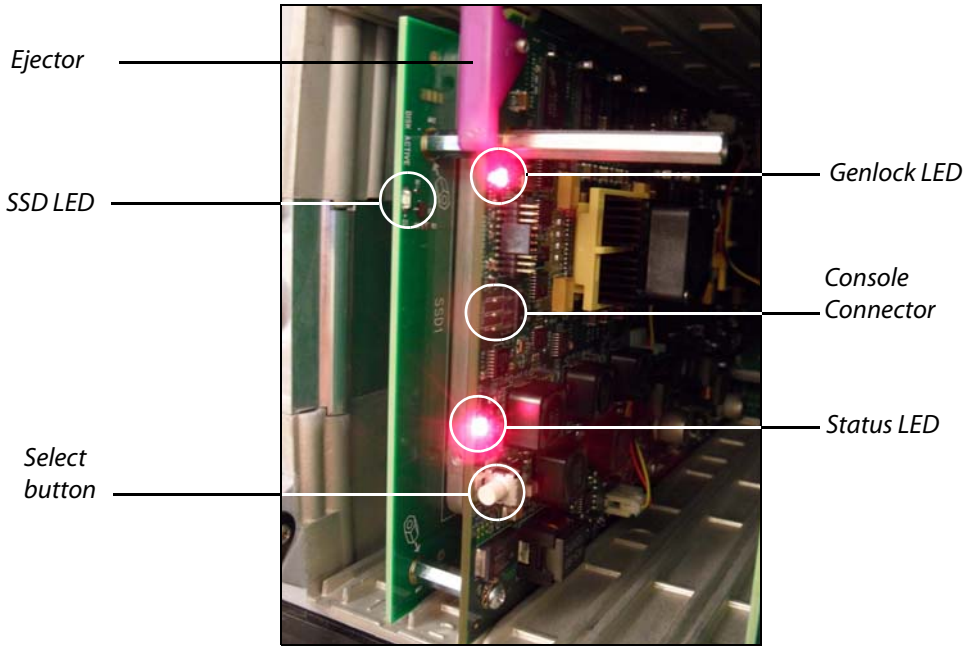



*Figure 2-4. SSP-3801 card's front edge components*

| | |
|---|---|
| Select button | Pushing this button enables or disables the Densité 3 frame's local control panel to control the SSP-3801 card.<br>When the local control panel has control of the card, the Status LED flashes yellow. See page 13 for more information. |
| Status LED | This multi-color LED indicates the status of the SSP-3801 by color, and by flashing or steady illumination.<br>• **Green** indicates no errors are occurring.<br>• **Steady red** indicates a major error.<br>• **Flashing red** indicates a critical error.<br>• **Steady yellow** indicates a minor error.<br>• **Flashing yellow** indicates that the card is selected for local control using the Densité 3 frame's control panel. |
| SSD LED | This blue LED indicates SSD activity. |
| Genlock LED | This two-state LED indicates one of two states:<br>• **Green** indicates the SSP-3801 has locked to its configured reference.<br>• **Red** indicates that the reference could not be locked. |
| Console Connector | Features a three-pin connector reserved for testing. |

## SSP-3801 rear connector panel

Like other Densité 3 cards, the SSP-3801 card interfaces with a separate rear connector panel that must be fixed to the rear of the Densité 3 frame. Figure 2-5 lists the required input/output connectors featured on the rear connector panel.

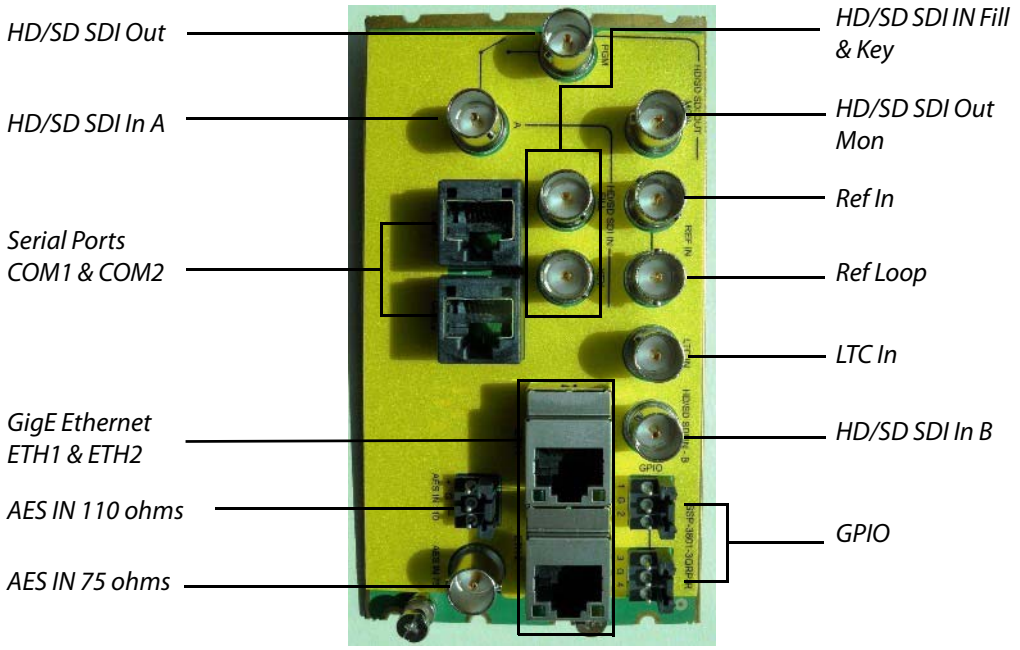



*Figure 2-5. SSP-3801 rear connector panel*

The following table provides a brief description of each input/output socket on the rear connector panel:

| | |
|---|---|
| SDI Video I/O | Three video inputs:<br>• **HD/SD SDI In A** (main program input)<br>• **HD/SD SDI In B**<br>• **HD/SD SDI In - Fill & Key**<br>Two video outputs:<br>• **HD/SD SDI Out (PGM)**<br>• **HD/SD SDI Out - Mon** (video monitoring & configurable as clean feed)<br>**Note**: The SSP-3801 is equipped with a mechanical bypass relay, which sends the SDI IN A signal directly to the SDI Out (PGM) in cases of power loss, card failure or a manual bypass command. The relay is not timed to the same reference as the card and, therefore, it may not be a clean switch. The timing of the switch and the time it takes to complete are not guaranteed, which may cause some disturbance on the PGM output. |

<table>
<tr><td>Reference</td><td>
Contains two reference connectors: **Ref In** and **Ref Loop**.<br>
The analog reference input can be a black burst or tri-level sync (in both 50Hz and 59.94Hz formats) signal.<br>
Note that the SSP-3801 also supports the internal Densité 3 digital reference (URS) provided by the REF-1801 card located in slot 10.<br>
The SSP-3801 can also be configured to lock to the SDI A input signal. The following chart identifies which reference format can be used with which video format:<br>
<table>
<tr><th></th><th></th><th colspan="6">Reference Types</th></tr>
<tr><th></th><th></th><th>625</th><th>525</th><th>1080i/50</th><th>1080i/59.94</th><th>720p/50</th><th>720p/59.94</th></tr>
<tr><th rowspan="6">Output Formats</th><th>625</th><td>X</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><th>525</th><td></td><td>X</td><td></td><td></td><td></td><td></td></tr>
<tr><th>1080i/50</th><td>X</td><td></td><td>X</td><td></td><td></td><td></td></tr>
<tr><th>1080i/59.94</th><td></td><td>X</td><td></td><td>X</td><td></td><td></td></tr>
<tr><th>720p/50</th><td>X</td><td></td><td></td><td></td><td>X</td><td></td></tr>
<tr><th>720p/59.94</th><td></td><td>X</td><td></td><td></td><td></td><td>X</td></tr>
</table>
The Reference should be connected to **Ref In**, while **Ref Loop** should be terminated if unused.
</td></tr>
<tr><td>Audio I/O</td><td>
One discrete AES input available through two connectors:<br>
• **AES 110 Ω** - balanced<br>
• **AES 75 Ω** - unbalanced<br>
The AES inputs are switchable and are mostly used for external audio or voice-over applications.
</td></tr>
<tr><td>Ethernet Ports</td><td>
Two 10/100/1000BASE-T Ethernet ports, which may be bonded to support network redundancy or used in a dual homed configuration:<br>
• **ETH 1**<br>
• **ETH 2**
</td></tr>
<tr><td>Serial COM Ports</td><td>
Two serial COM ports in the form of RJ-45 connectors:<br>
• **COM 1**<br>
• **COM 2**<br>
These serial ports can be configured as RS-232 or RS-422. Each port's parameters can be set from the Densité 3 frame local control panel.
</td></tr>
</table>

| | |
|---|---|
| GPIO | Two **GPIO** connectors offering up to four GPIOs, which can be configured as general purpose inputs or outputs.<br>The pinouts are **1\|G\|2** and **3\|G\|4**. For more information, see Configuring the General Purpose Input/Output (GPIO) triggers in the SSP-3801 User Guide.<br> |
| LTC | One Linear Timecode (**LTC In**) connector to support time synchronization. |

## Densité 3 frame's local control panel

Like all other cards installed in a Densité 3 frame, the SSP-3801 is connected to the frame's controller card, which handles all interaction between the cards and the outside world. The controller also supports remote operation via its Ethernet ports, and local operation using its integrated control panel (figure 2-6).

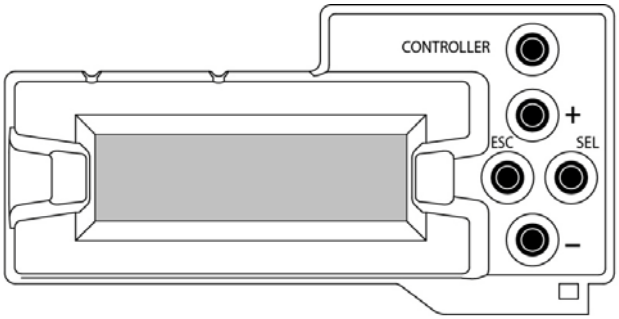



*Figure 2-6. The Densité 3 frame local control panel*

With no operating controls located on the SSP-3801 card itself, you can use the Densité 3 frame's local control panel to perform basic SSP-3801 configuration and control tasks. The local control panel and its push-buttons provide you with a menu of parameters and allows you to adjust parameter values. See Densité 3 Control Panel Menus on page 49 for a listing of all the available parameters.

**To gain control of the SSP-3801 card and browse the available parameters:**

1. Push the **Select** button on the SSP-3801 card edge (see figure 2-4) to assign the local control panel to operate the SSP-3801.

   The SSP-3801 card's **Status LED** flashes yellow to indicated that it is the card currently being controlled by the frame's local control panel.

2. Use the following control panel buttons to navigate through the menu, as well as to configure and adjust the SSP-3801 parameters and settings:

| | |
|---|---|
| [+] [–] | Used for menu navigation and value modification. |
| **[SELECT]** | Gives access to the next menu level. When a parameter value appears, pushing this button once enables modification of the value using the [+] and [–] buttons; a second push confirms the new value. |
| **[ESC]** | Cancels the effect of parameter value changes that have not been confirmed; pushing [ESC] causes the parameter to revert to its former value.<br>Pushing [ESC] moves the user back up to the previous menu level. At the main menu, [ESC] does not exit the menu system. To exit, re-push the [SELECT] button for the card being controlled. |
| **[CONTROLLER]** | Pushing the Controller button on the control panel selects the Controller card itself. |

# SSP-3801 web interface

The SSP-3801 provides its own web-based user interface, which allows you to remotely perform configuration, maintenance and control tasks, as well as monitor the state and health of the card.

Some of the specific tasks that you may perform using the SSP-3801 web interface are:

- Device configuration
- Software upgrades
- Status monitoring
- Playlist view / emergency controls
- Advanced diagnostics / logging for in-field support
- H264 Confidence Monitor and audio meters

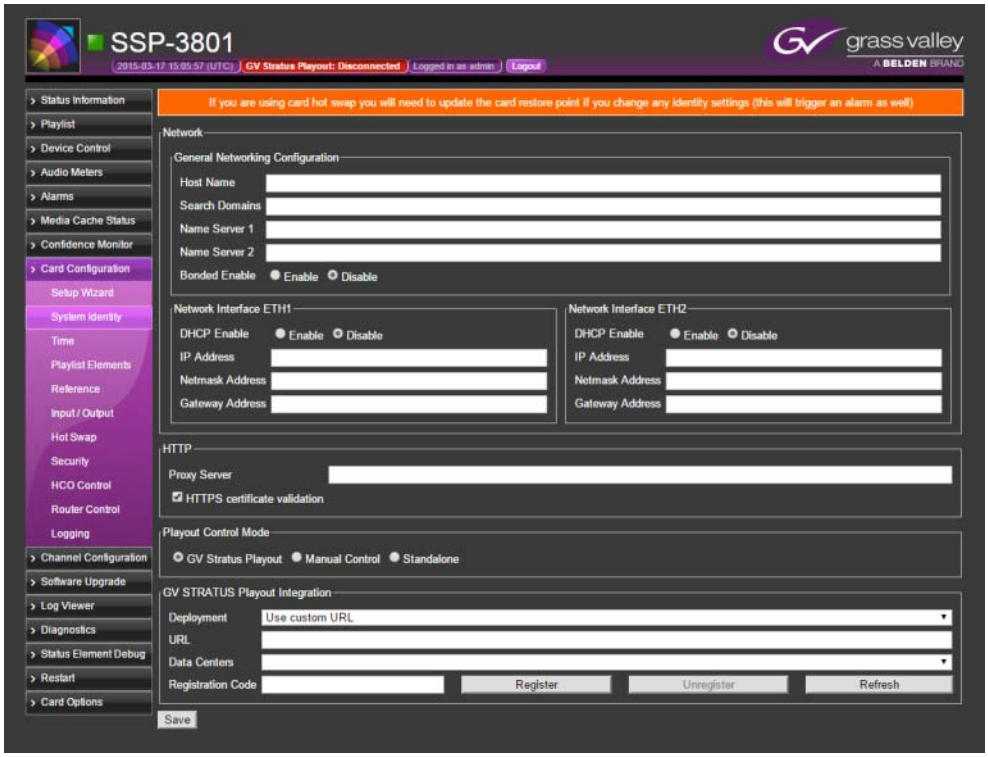



*Fig. 2-7: The SSP-3801 web interface*

For more information on configuring the SSP-3801 card, see Configuring the SSP-3801 card on page 25.

# 3 Installing the SSP-3801 card

This chapter explains how to install the SSP-3801 card in a Densité 3 frame, as well as how to attach the cables. It also explains how to start the card and read its start-up status LEDs.

This chapter has the following sections:

*Installing the rear connector panel* . . . . . 18
*Installing the SSP-3801 card* . . . . . 18
*Starting the SSP-3801 card* . . . . . 20
*Installing a second on-board solid state storage drive* . . . . . 21
*Connecting a 110 ohm LTC signal to the card* . . . . . 23

# Installing the rear connector panel

The SSP-3801 rear connector panel must be installed in the Densité 3 frame before the card can be inserted.

> **Note:** All Densité 3 cards and rear panels can be installed with the frame power on. As a safety precaution however, we recommend turning off power to the Densité 3 frame during the installation of the rear connector panel.

**To install the rear connector panel:**

1. If a card is installed in the slot whose rear panel is being changed, remove it or slide it over by releasing the captive screw(s) at the bottom and then moving or removing the card.
2. Position the SSP-3801 rear connector panel with the connectors facing outwards and the captive screws at the bottom.
3. Secure the rear connector panel in place by tightening the captive screws at the bottom.

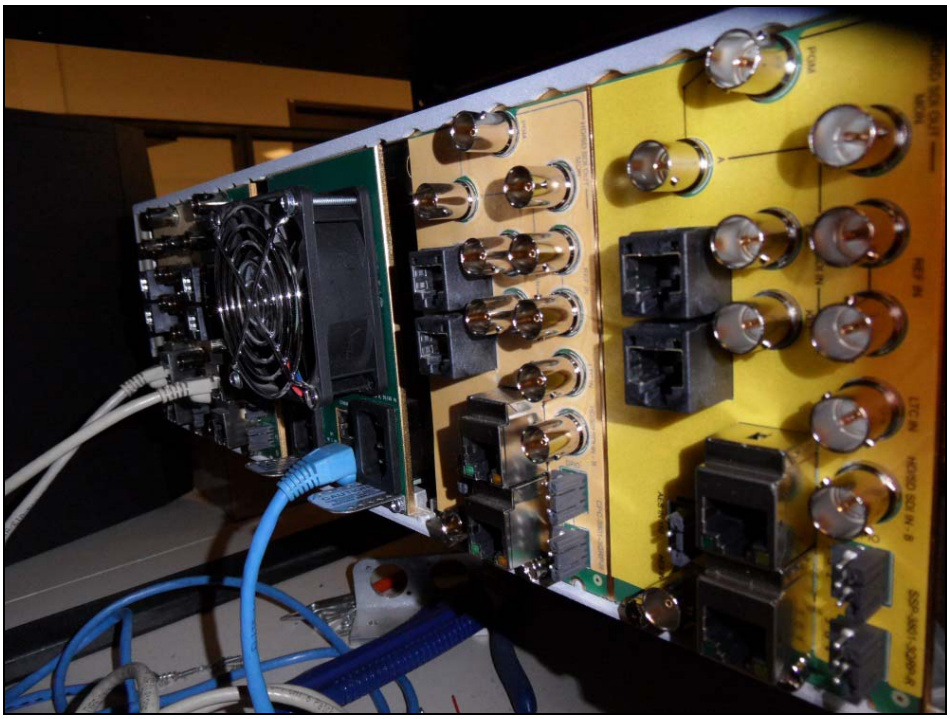


*Figure 3-1. SSP-3801 rear connector panels installed in a Densité 3 frame*

# Installing the SSP-3801 card

Once a matching rear connector panel has been installed, you can install the SSP-3801 card.

**To install the SSP-3801 card, follow these steps:**

1 Open the front panel of the frame.

2 Slide the SSP-3801 card into the slot and push gently on the **Ejector** handle to seat the connectors (figure 3-2).

The card should be inserted into the far left slot associated with the SSP-3801's 4-slot rear panel. If you insert the card into the wrong slot, the on-card status LED will flash red to indicate that there is no connection to the rear panel.

Ensure that the card is in the correct slot to prevent damage to itself or other hardware in the frame.

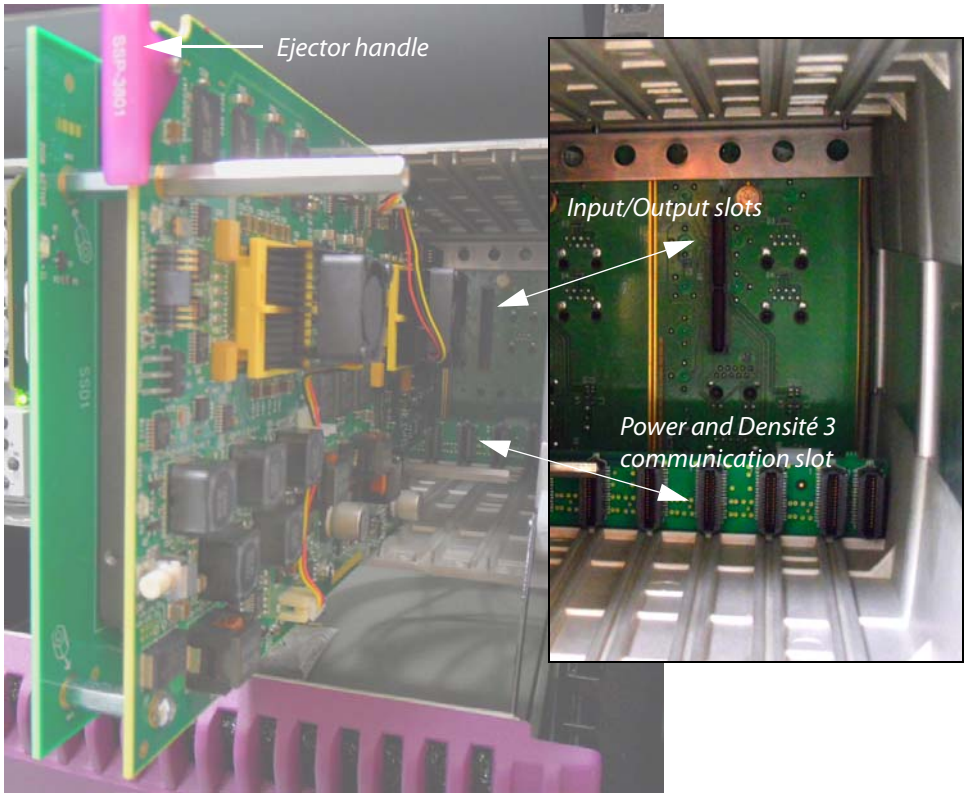



*Figure 3-2. Inserting the SSP-3801 card into the Densité 3 frame*

3 Close the front panel of the frame.

**Note:** To remove an existing SSP-3801 card from the slot, tilt up the swivel handle on the front of the card to lever the connectors apart, then use the handle to pull the card straight out of the slot.

## Cabling the SSP-3801 card

Cabling the SSP-3801 depends upon your intended use. Note that the scope of this document is limited to setting up the SSP-3801 card for basic start-up functionality. As such, you should ensure that the following connections are made to the rear connector panel of the SSP-3801 card.

- Connect a network Ethernet cable to the **ETH1** Ethernet port. Note that the default configuration is to provide redundant bonded networking with ETH1 as primary and ETH2 for redundancy.
- Connect the **PGM** (SDI Output) to downstream equipment such as a broadcast monitor or a router input, for example.
- Optional - Connect an external reference source to **REF IN**
- Optional - Connect HD/SD SDI source input to **A (SDI IN A)**

Information about the remaining input-output connections are provided on page 11.

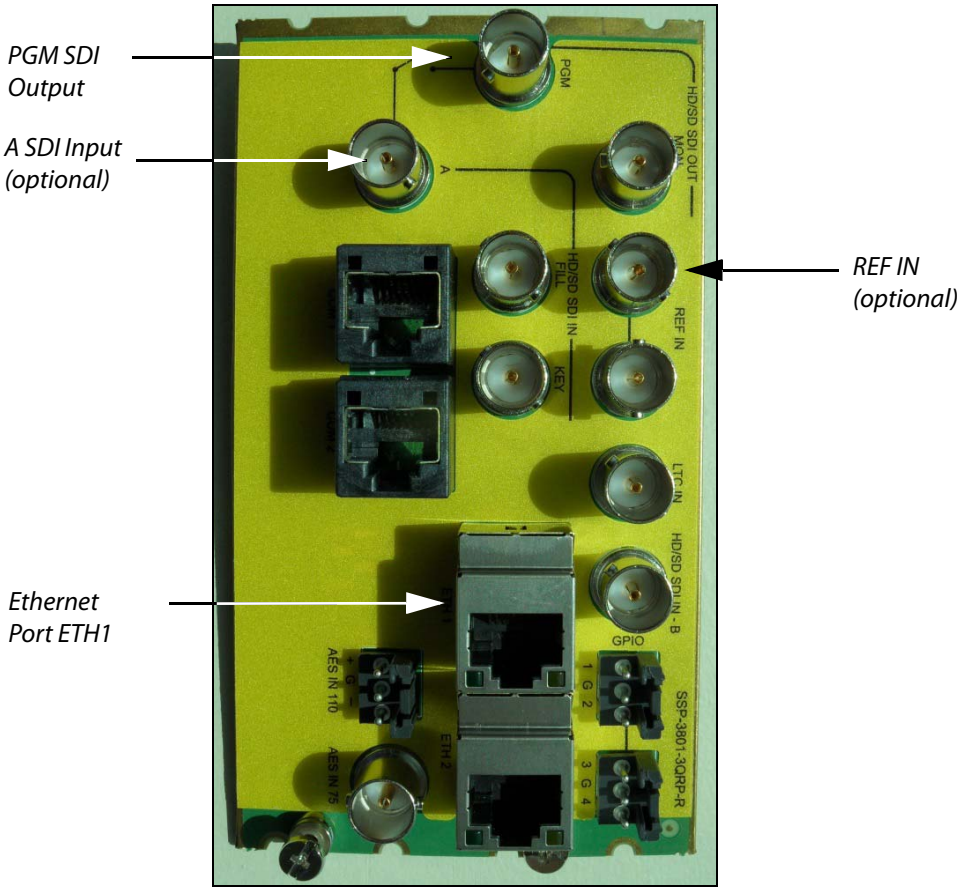



*Figure 3-3. Basic SSP-3801cabling connections*

# Starting the SSP-3801 card

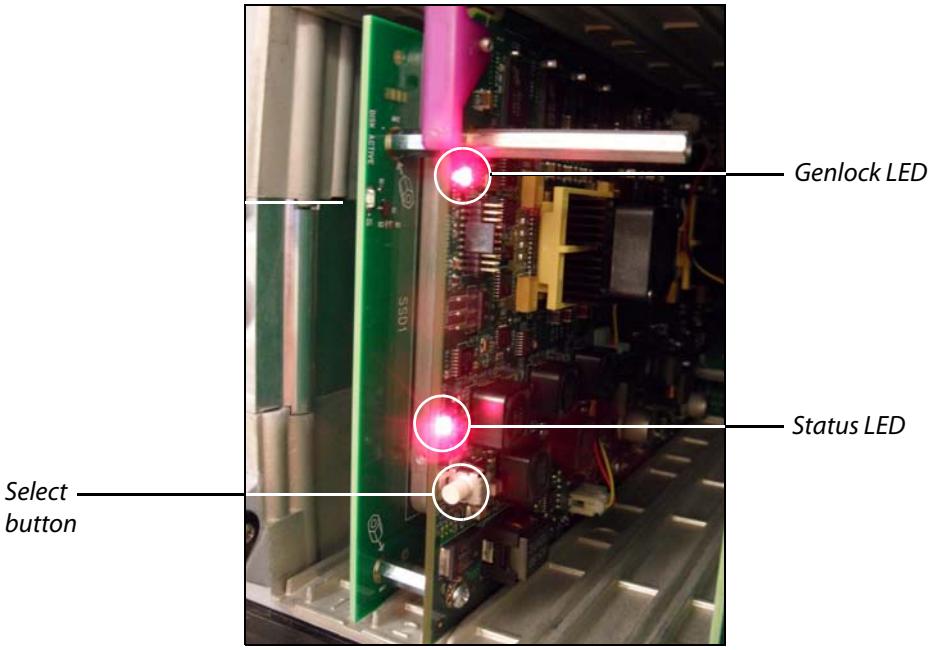
Once the SSP-3801 rear connector panel and card have been installed, power up the Densité 3 frame and ensure that the card is running properly.

**To start the SSP-3801 card:**

1 If it is not already done, power up the Densité 3 frame with the SSP-3801 card properly inserted.

The card will run its start up procedure.

2 Once the card's start-up procedure is complete, ensure that the card's **Status** and **Genlock** LEDs are illuminated.




3 Press the SSP-3801's **Select** button on the card's front-edge. Ensure that the Densité 3 frame's local control panel properly displays **SSP-3801** and the slot number, followed by its **Status** menu item.

## Installing a second on-board solid state storage drive

If you require additional storage space for media, you can order and install a second solid state storage drive (SSD) on the card.

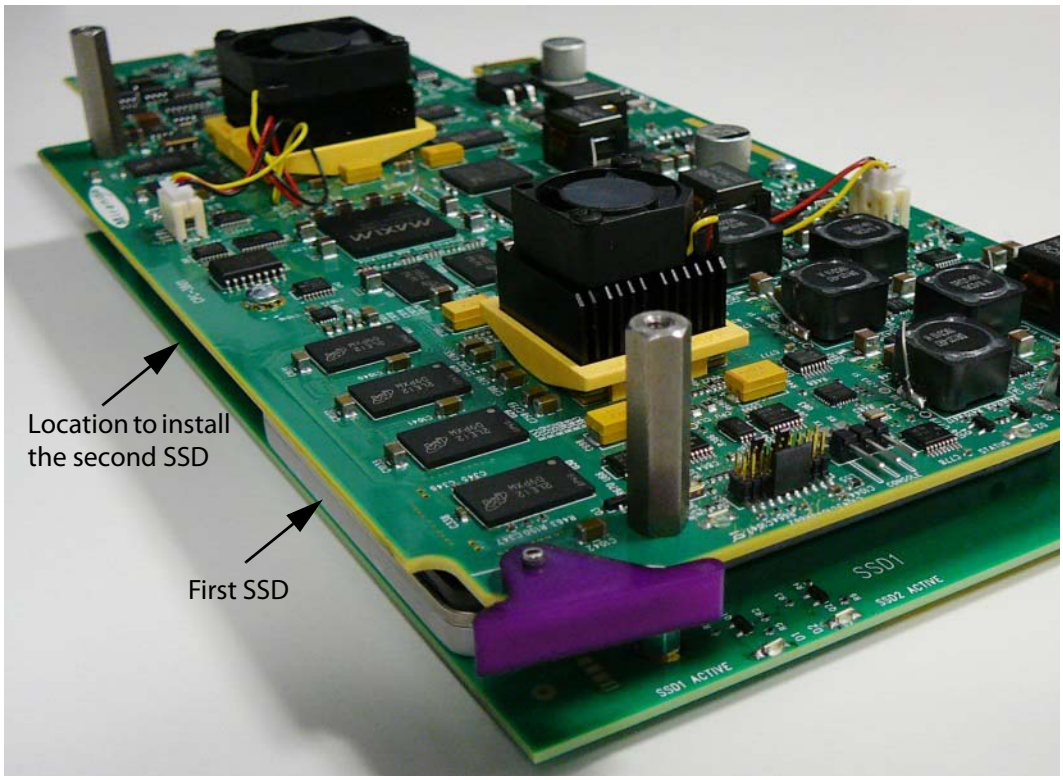



*Figure 3-4. positions of the SSDs*

**To install the second SSD:**

1 Log into the card's web interface. For more information see Logging into the SSP-3801 card's web interface on page 26.

2 Obtain and enable the OPT 2SSD license. For information about how to enable a license, see "Enabling or disabling a license option" in the User Guide.

3 From the menu, select **Restart** and click **Safe Shutdown**.

4 Once shutdown is complete, remove the SSP-3801 card from the Densité 3 frame.

5 Install the second SSD:

- Locate the first SSD in between the front and rear of the card. The second SSD is installed next to the first SSD.
- Hold the SSD so that the SATA connectors are in the correct position to align with the connectors on the rear of the card.
- Carefully insert the second SSD into position beside the first SSD and slide it into the connectors ensuring that the connection is well made.
- Screw the SSD into place with the screws provided.

6 Replace the SSP-3801 card into the Densité 3 frame.

7 When the card has rebooted, verify that the SSD was installed correctly. To verify:

- Open and log into the SSP-3801 card's web interface (see page 26).
- From the menu, select **Status Information** > **System** and click **Partitions**. In the **Media Cache Partition** section, the size should include the combined amounts of

the two SSDs. If it does not, verify that the license was enabled correctly and the SSD is well seated in the connectors.

## Connecting a 110 ohm LTC signal to the card

A Linear Timecode (LTC) signal is an audio signal encoded with SMPTE timecode data with a preferred range 1 to 2V used to support time synchronization between devices. The SSP-3801 card provides one unbalanced input with a 75 ohm linear timecode BNC connector (**LTC In**) which can be connected to an LTC generator to provide the card with a time code source.

If your LTC generator generates a 110 ohm LTC signal, you must use a balun that converts a 110 ohm XLR connector to a 75 ohm BNC connector to connect your LTC generator to the card.

# 4 Configuring the SSP-3801 card

This chapter provides you with instructions for performing the initial configuration tasks required to get the SSP-3801 running so that you can verify for proper installation, as well as perform basic playout operations.

This chapter contains the following sections:

*About the configuration process* . . . . . 26
*Setting and verifying the SSP-3801 default settings* . . . . . 26
*Logging into the SSP-3801 card's web interface* . . . . . 26
*Running the Setup wizard* . . . . . 28
*Configure the System Identity settings* . . . . . 28
*Configure the Time settings* . . . . . 31
*Configure the Reference settings* . . . . . 34
*Configure the Input / Output settings* . . . . . 35
*Creating a restore point for Hot Swap* . . . . . 36
*Managing the user profiles* . . . . . 37
*Managing the Device Access security settings* . . . . . 38
*Configuring HCO Control to support card redundancy* . . . . . 39
*Configuring an external router for switching between live events* . . . . . 40
*Configuring the serial port for the Emergency Alert System (EAS)* . . . . . 45
*Resetting the configuration settings to factory defaults* . . . . . 46
*Recovering from a card failure* . . . . . 47
*Verifying the accuracy of the SSP-3801 card's settings* . . . . . 47

# About the configuration process

The following summarizes the tasks that you must perform to configure a brand new, factory-configured SSP-3801 card.

1 Verify and set the SSP-3801 default settings.
2 Log into the SSP-3801 card's web interface.
3 Configure the System Identity settings.
4 Configure the Timing settings.
5 Configure the Reference settings.
6 Configure the Input / Output settings.
7 Manage the list of Users.
8 Verify the accuracy of the SSP-3801 card's settings.
9 Optional - Upgrading the SSP-3801 card's software.

# Setting and verifying the SSP-3801 default settings

In preparation for other configuration tasks, we recommend that you verify and ensure some of the SSP-3801 settings are set to their default values, as well as taking note of the SSP-3801 card's current IP address.

**To verify and set the default settings, follow these steps:**

1 Press the SSP-3801's **Select** button on the card's front-edge.
2 Ensure that the Densité frame's local control panel properly displays **SSP-3801** and the slot number, followed by its **Status** menu item.
3 Using the **Select** button on the local control panel, navigate to **Status** > **Network Status** > **IP Status** > **ETH1** > **DHCP Enable** and set it to **Enable**.
4 Press the **Escape** button once, then the [ - ] button to display the current IP Address assigned to the SSP-3801 card.
5 Take note of the IP address, which you will need to provide in a later step of the configuration procedure.
6 If you connected two Ethernet cables with the intention to have them bonded for redundancy, navigate back up to **Status** > **Network Status** > **Bonded Enable** and verify that it is set to **Enabled**.

# Logging into the SSP-3801 card's web interface

The SSP-3801 web interface provides you with remote access to all of the parameters and settings specific to a particular card. The following instructions demonstrate how to log into the SSP-3801 web interface from any client computer that is on the same network as the SSP-3801 card.

> IMPORTANT
>
> To access the Solid State Playout-3801 web interface, we recommend that you use a display with a minimum screen resolution of 1920 x 1080 pixels and the latest version of Google Chrome at 100% zoom in full-screen (F11) mode.

**To log into an SSP-3801 card's web interface:**

1 Type the IP address of the SSP-3801 card into the address bar of a web browser. By default cards are factory-configured and shipped with DHCP enabled. You can obtain the card's initial IP address using the Densité local control panel (see page 26).

> IMPORTANT
>
> Later in the initial configuration procedure we recommend that you disable the card's DHCP setting and that you assign the card an appropriate static IP address on your local network (see Configure the System Identity settings on page 28).

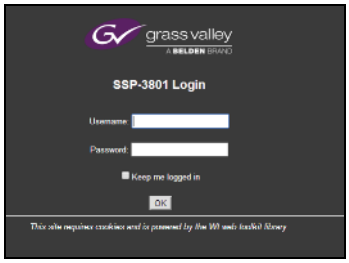



*Figure 4-1. SSP-3801 Login page*

2 Specify a valid username and password and click **OK**.

If this is the first time you are logging into the SSP-3801, you should log in using the default admin user name and password provided with the SSP-3801 card:

- username: `admin`
- Password: `Playout` (the second character is the number 1)

> IMPORTANT
>
> If you are configuring the SSP-3801 card for the first time, we strongly recommend that you change password for the "admin" account. If the default password is not changed, an alarm is triggered and a reminder may appear to encourage you to do so to ensure the security of the card. For more information on changing the password, see Managing the user profiles on page 37.

The SSP-3801 web interface opens. All of the card's parameters and settings are available within the thematic menus on the left of the page.

# Running the Setup wizard

The Setup Wizard makes configuring the SSP-3801 card easy and efficient. When you launch the Setup Wizard, it will prompt you with a series of dialog boxes to provide the information required.

The following are the types of information requested, followed by the menu command where you can manually view or edit the information in the **Card Configuration** menu:

- Network Settings (**System Identity**, see Configure the System Identity settings on page 28)
- Playout control service settings (**System Identity**, see Configure the System Identity settings on page 28)
- HTTP proxy server (**System Identity**, see Configure the System Identity settings on page 28)
- Time sync settings (**Time**, see Configure the Time settings on page 31)
- NTP servers (**Time**, see Configure the Time settings on page 31)
- Time sync mode settings (**Time**, see Configure the Time settings on page 31)
- Reference settings (**Reference**, see Configure the Reference settings on page 34)
- Video standard settings (**Input/Output**, see Configure the Input / Output settings on page 35)

Once you finish the Setup Wizard, you can run a system check to verify that the settings you selected function with the SSP-3801 card.

**To launch the Setup Wizard:**

1. From the menu, select **Card Configuration** > **Setup Wizard**. The Setup sequence begins.
2. Complete the fields as required and click **Next** to continue.

   If you wish to go back and change your values, click **Previous** to move back and click **Next** to move forward.
3. Click **Finish**. The settings you selected will be applied immediately.
4. The **System Health Checks** prompts you to check the settings you have selected are functional. You have two choices:
   - **Run Checks**: runs a system check to ensure that there are no conflicts. All valid connections are listed, as well as any conflicts or failures.
   - **Close**: closes the dialog box.

# Configure the System Identity settings

Use the System Identity page to configure the SSP-3801 card's identity, network, playout control mode, and HTTP settings. When a card is configured and a restore point is created, its identity settings are stored in the Densité frame's memory. If changes are made to the System Identity settings, you must create a new restore point otherwise old settings will be applied to the card upon insertion of a new card or a system restart.

> IMPORTANT
>
> Take special care when configuring the System Identity and the Time settings. If there are inconsistencies in these parameters, the SSP-3801 card and the Playlist may not function properly.

**To configure the system's identity:**

1 Open and log into the SSP-3801 card's web interface (see Logging into the SSP-3801 card's web interface on page 26).

2 From the menu, select **Card Configuration** > **System Identity**.

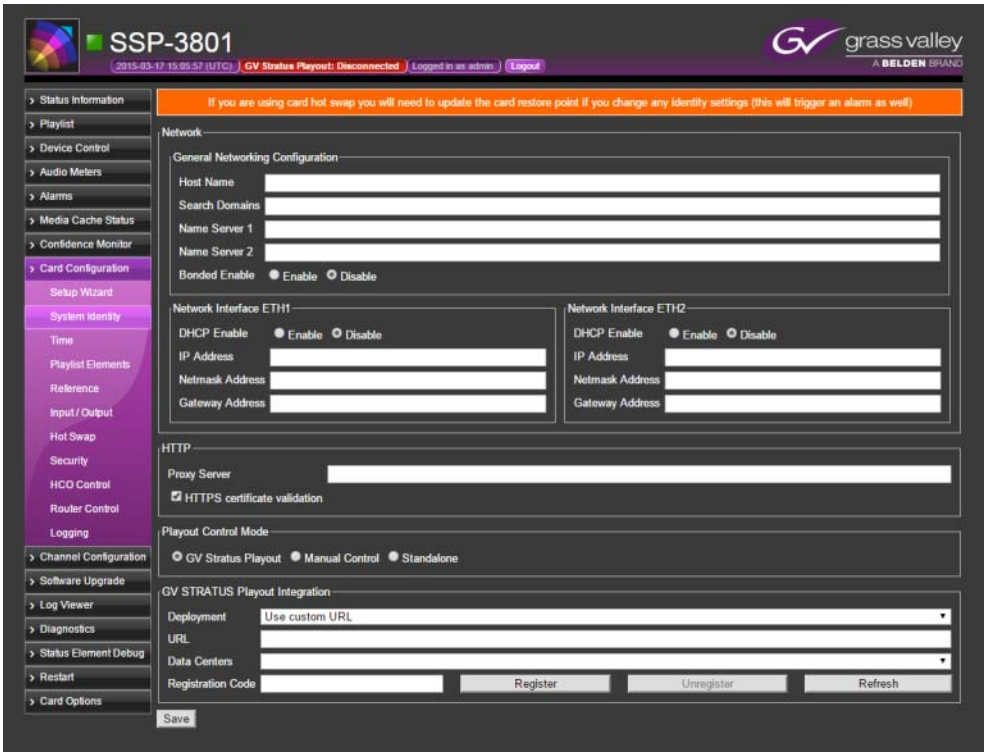



*Figure 4-2. SSP-3801 web interface's System Identity page*

3 In the **General Networking Configuration** section, complete the following settings:

- **Host Name**: Specify the network host name.
- **Search Domains**: Specify space-separated list of domains to search.
- **Name Server 1 and Name Server 2**: Specify the IP address or hostname of the Domain Name System Server for each.
- **Bonded Enable**: If you connected two Ethernet cables with the intention to have them bonded, select **Enable.** To disable Ethernet bonding, select **Disable**.

4 In the **Network Interface ETH** sections, disable DHCP and assign static IP addresses:

- **DHCP Enable**: Select **Disable**.
- Specify the static **IP Address**, **Netmask Address**, and **Gateway Address**.

5 In the **Proxy Server** field, type the HTTP Proxy server to use. If there is no proxy server used, leave this field empty.

6 Enable **HTTPS certificate validation** as required.

> IMPORTANT
>
> If you have made any changes to the network settings, the system will prompt you to restart the card. If you changed the IP address, you may need to update the SSP-3801 web interface's URL address before proceeding with registering with the GV STRATUS Playout service.

7 In the **Playout Control Mode** section, select one of the following to specify how the playout is controlled:
- **GV STRATUS Playout**: the SSP-3801 card will be integrated with the GV STRATUS Playout service. The playlist is managed by the GV STRATUS Playout service.
- **Manual Control**: the playout is manually controlled by an upstream automation system via SCTE-104 without the use of a playlist on the SSP-3801 card.
- **Standalone**: the playlist is managed solely from the SSP-3801 card's Playlist page and is intended for testing only.

8 Depending on the Playout Control Mode you selected, continue with one of the following:

| Mode | Next step |
|---|---|
| **GV STRATUS Playout** | **To configure the integration settings:**<br>1 In the **Deployment** field in the **GV STRATUS Playout Integration** section, click the name of the deployment to which the SSP-3801 card will be registered. The URL of the selected deployment appears in the **URL** field. If you selected **Use custom URL**, type the URL address for your GV STRATUS Playout service in **URL** field.<br>2 The deployment setting must be saved before the remaining settings can be configured. Click **Save**.<br>3 In the **Data Centers** field, click the name of the data center serving your GV STRATUS Playout service.<br>4 In the **Registration Code** field, type the key provided by the GV STRATUS Playout service and click **Register**.<br>5 Click **Save**. |
| **Manual Control** | Click **Save**. |
| **Standalone** | Click **Save**. |

> IMPORTANT
>
> Once you have finished configuring all the settings on the card, make sure you create a restore point otherwise old settings will be applied upon insertion of a new card or a system restart.

## Registering the card with GV STRATUS Playout service

If you did not register the card with the GV STRATUS Playout service when you configured the System Identity, you can do so separately. Once the card is registered to a device in the

service, the Playlist and the Channel Configuration are managed by the service. The service will overwrite any changes in those pages as long as the card remains synced with it.

When the card registers with the service, it stores a copy of its configuration on the service and obtains the security certificate required for authentication. If you have already created a Densité Restore Point, you must create a new restore point after registering the card or old settings will be applied upon insertion of a new card or a system restart.

You would only need to re-register the SSP-3801 card if:

- it was moved between deployments of the GV STRATUS Playout service
- it was deleted from the service
- it was disconnected for more than 6 months

As long as the card is connected to the service at least once every six months, the card will manage the security certificate renewals itself.

**To register the card:**

1. Open and log into the SSP-3801 card's web interface (see page 26).
2. From the menu, select **Card Configuration** > **System Identity**.
3. In the **GV STRATUS Playout Integration** section, configure the following:
   - In the **Deployment** field, click the name of the deployment to which the SSP-3801 card will be registered. The URL of the selected deployment appears in the **URL** field. If you selected **Use custom URL**, type the URL address for your GV STRATUS Playout service in **URL** field.
   - The deployment setting must be saved before the remaining settings can be configured. Click **Save**.
   - In the **Data Centers** field, click the name of the data center serving your GV STRATUS Playout service.
   - In the **Registration Code** field, type the key provided by the GV STRATUS Playout service and click **Register**.
4. Click **Save**.

> IMPORTANT
>
> Once you have finished configuring the System Identity settings on the card, make sure you create a restore point otherwise old settings will be applied upon insertion of a new card or a system restart.

# Configure the Time settings

Use the SSP-3801 web interface's **Time** page to configure the SSP-3801 card's time settings. The card uses and displays time in UTC. It obtains its time from the source selected as the Time Source:

- VITC: the time code is carried as part of the reference signal configured in Card Configuration > Reference.
- LTC: the card obtains its time from the LTC generator connected to the LTC In connector.
- URS: time is provided to the card by a reference card installed in the Densité frame.

- ATC_LTC, ATC_VITC1, ATC_VITC2: time is obtained from the embedded time code in the ancillary data coming from the SDI input.
- NTP: The card obtains its time from the NTP server listed in the NTP section.

As a best practice, you should choose a time source other than NTP since NTP is not accurate and tends to drift, which means time synchronization needs to be continuously performed to keep the NTP and the video clock in sync. Other time code sources are more accurate and stable sources of time. If there is no valid signal from the time source, however, the card will fail to set the time and will eventually free run. It will not default to using the NTP servers as a time source.

When the selected Time Source is in UTC, you do not need to configure the Time Zone or Daylight Saving sections. If the Time Source is Local, then you need to configure the Time Zone or Daylight Saving sections so the card can internally convert the time to UTC.

The card obtains the date from the NTP servers listed in the NTP section. The date and time provided by the NTP server must always be in UTC since it can also be used as a reference time to verify if the video time is in UTC. In addition to providing the NTP servers as the source for the date, it is important to configure the Densité frame with a valid date and time since it serves as a backup source for the date.

> IMPORTANT
>
> Take special care when configuring the System Identity and the Time settings. If there are inconsistencies in these parameters, the SSP-3801 card and the Playlist may not function properly.

**To configure the Time settings:**

1. Open and log into the SSP-3801 card's web interface (see page 26).
2. From the menu, select **Card Configuration** > **Time**.

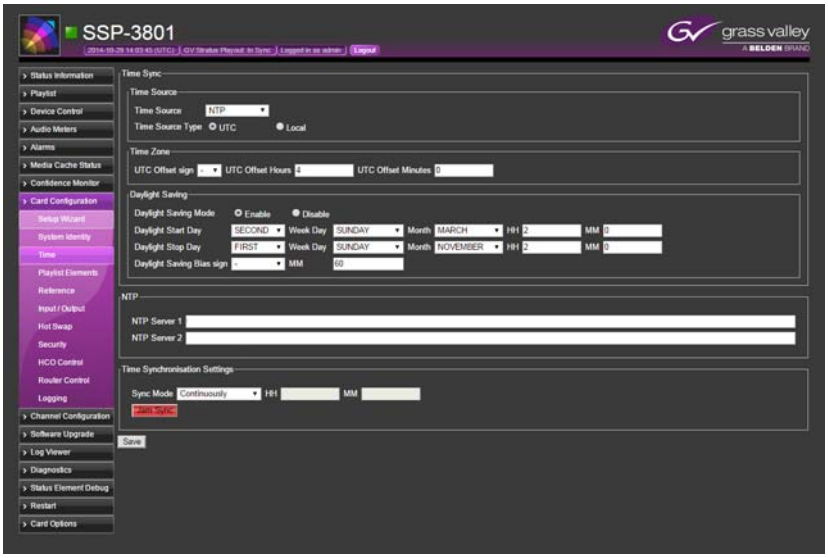



*Figure 4-3. SSP-3801 web interface's Time page*

3 In the **Time Source** list, select the time source from which the SSP-3801 card obtains its local time. If present, select **VITC**, **LTC**, **URS** or one of the **ATC** options, otherwise select **NTP**.

> IMPORTANT
>
> It is recommended that you use one of the other time sources instead of NTP since they are more stable. NTP is not accurate and is likely to drift from the video clock, which means it will likely require continuous time synchronization to keep the NTP and video clock in sync.

4 Set the **Time Source Type** setting to either **UTC** or **Local** to reflect which time zone the selected Time Source is using.

5 If you selected Local as the Time Source Type, you must set the UTC Offsets so the card can internally convert the time to UTC. In the **Time Zone** section, set the **UTC Offset sign**, **UTC Offset Hours**, and **UTC Offset Minutes** to specify the difference between Local and UTC time when Daylight Saving Time is not in effect.

6 If you selected Local as the Time Source Type, you must also set the Daylight Savings settings so the card can make the appropriate adjustments when the time changes. In the **Daylight Saving** section, specify the daylight saving time settings for the local time zone:

- Click **Enable**.
- To configure when Daylight Saving Time begins, click the week of the month in the **Daylight Start Day** list, click the day of the week in the **Week Day** list, click the month in the **Month** list, and specify the time when the clocks move forward by typing the hour in the **HH** field and the minutes in the **MM** field.
- To configure when Daylight Saving Time ends, click the week of the month in the **Daylight Stop Day** list, click the day of the week in the **Week Day** list, click the month in the **Month** list, and specify the time when the clocks move backward by typing the hour in the **HH** field and the minutes in the **MM** field.
- To specify the difference between local and UTC time when Daylight Saving Time is in effect, select the plus or minus sign in the **Daylight Saving Bias sign** list and type the number of minutes in the **MM** field. The Daylight Saving Bias is the offset value when a clock is set to automatically change according to Daylight Saving Time, which means it is normally -60 (minus sixty minutes) in areas that practice Daylight Saving Time and 0 (zero) in areas that do not.

7 In the **NTP** section, specify the IP address or hostname in the **NTP Server 1** and **NTP Server 2** fields for the two network time servers that will be used for obtaining the date. The NTP date must be always in UTC.

8 In the **Time Synchronisation Settings** section, set the **Sync Mode** to determine how the SSP-3801 will synchronize its time to the time source:

- **Continuously**: Time adjustments are made continuously.
- **At Specified Time**: Time adjustments are scheduled for specific times. Type the hours in the **HH** field and minutes in the **MM** field.
- **Never**: Time adjustments are never applied.

The **Jam Sync** button can be used at anytime to manually force the time synchronization.

9 Click **Save** to apply all changes.

## Configure the Reference settings

Use the SSP-3801 web interface's **Reference** page to configure the card's reference signal settings. The **Input Timing** section displays the current state of the timing between the reference signal and the SDI input signals. One of the following states is displayed for each input:

- **Locked**: a valid SDI input signal is present and locked to the selected reference signal.
- **Absent**: an SDI input signal is not detected. This may indicate that no signal is present or a problem with the cable is occurring.
- **Mismatch**: the SDI input standard does not match the configured output standard of the card.
- **Unlocked**: the SDI input and the reference signal are not matching in frequency and phase causing a vertical drift (the SDI input is free-running).

If the state is anything other than Locked, use the features in the **Output Timing Config** section to synchronize the signals.

**To configure the card's reference settings:**

1 Open and log into the SSP-3801 card's web interface (see page 26).

2 From the menu, select **Card Configuration** > **Reference**.

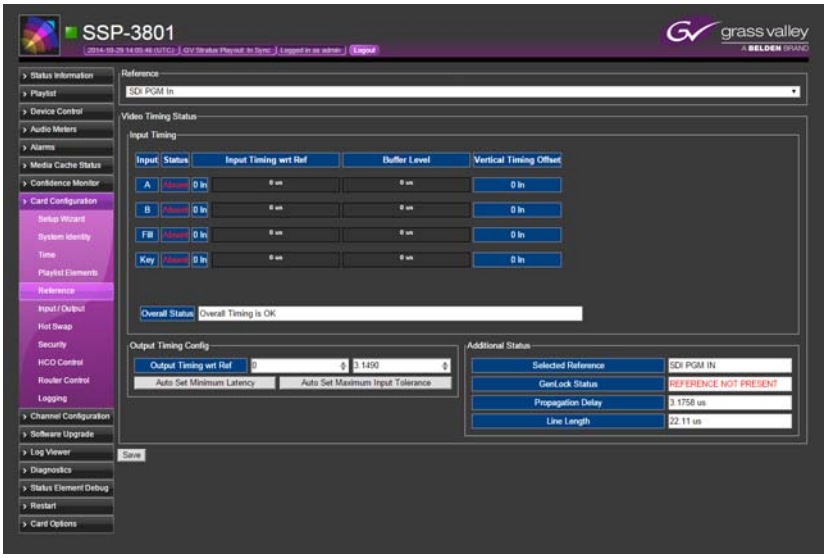



*Fig. 4-4: SSP-3801 web interface's Reference page*

3 Specify the source of the reference signal in the **Reference** field. You have the following choices:

- **External Ref**: Select if the source of the reference signal is an analog reference input such as a black burst or tri-level sync signal.
- **SDI PGM In**: Select if you want the source of the reference signal configured to lock to the **HD/SD SDI In A** input signal.

- **URS**: Select if the source of the reference signal is from an internal Densité digital reference (URS) provided by the REF-1801 card located in slot 10.

4 In the **Output Timing Config** section, you can manually set the output timing in lines and microseconds using the two up/down boxes, or you can use the following buttons to set the values based on input timings:

- **Auto Set Minimum Latency**: automatically calculates the minimum propagated delay.
- **Auto Set Maximum Input Tolerance**: automatically calculates the maximum tolerance for input timing or jitter changes.

As you adjust the output timing, the value in the **Overall Status** field changes. For the card to function adequately, it is recommended that Overall Status show as "Overall Timing is OK" and the GenLock Status to display "Reference Locked".

5 Click **Save** to apply all changes.

## Configure the Input / Output settings

Use the SSP-3801 web interface's **Input/Output** page to configure the card's input/output settings and then optionally test the card's playout to ensure proper operation.

**To configure the SSP-3801 card's input/output settings:**

1 Open and log into the SSP-3801 card's web interface (see page 26).

2 From the menu, select **Card Configuration** > **Input/Output**.

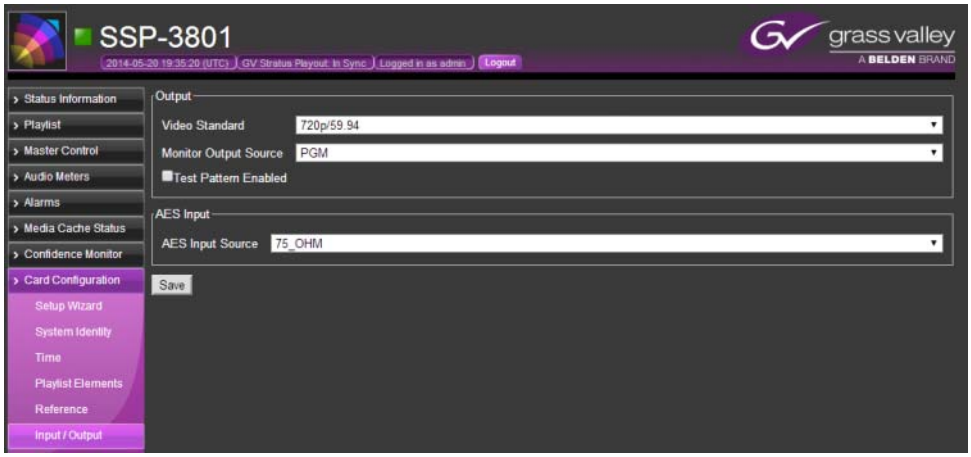



*Fig. 4-5: Input/Output page*

3 In the **Video Standard** list, select the video standard that the card will output.

4 In the **Monitor Output Source** list, select the source to be sent to MON, which can be used as a troubleshooting aid, for sending a clean feed, or previewing a source event about to go to air when router control is enabled.

5 **Optional**: If you have cabled the card to a downstream broadcast monitor, you can verify if the card is operating properly by selecting the **Test Pattern Enabled** checkbox.

Once you have saved the changes, a test pattern from the SSP-3801 card will playout to the broadcast monitor. When you can confirm that the test pattern plays out, clear the **Test Pattern Enabled** checkbox, and click **Save** again.

6 If you selected an SD standard, you can choose whether line 23 in PAL (625 Line) or lines 20 and 21 in NTSC (525 Line) contain video or carry closed captioning or widescreen signaling (WSS). To carry closed captioning or widescreen signaling, select the **Pass Closed Captions/WSS** checkbox.

7 In the **AES Input Source** list, select which type of AES cable is connected to the card.

8 Click **Save** to apply the changes.

## Creating a restore point for Hot Swap

Before a Hot Swap can be performed, a restore point must be created. A restore point is a copy of the SSP-3801 card's identity settings stored in the Densité frame's memory. The restore point includes all the settings configured on the Card Configuration > System Identity page, except for the Data Centers value.

If changes are made to the System Identity settings, you must create a new restore point otherwise old settings will be applied to the card during a system restart or upon insertion of a new card such as when you switch a card in a Densité frame without powering-down the system, which is known as a Hot Swap. For more information on Hot Swap, see "Switching SSP-3801 cards in a Densité frame (Hot Swap)" in the SSP-3801 User Guide.

A restore point can be created by using one of these methods:

- If the Densité controller and the SSP-3801 card are on the same network, you can generate the restore point from the SSP-3801 web interface.
- You can save the SSP-3801 card's identity via the Densité controller's web interface.
- You can save the SSP-3801 card's identity using the front panel of the Densité controller.

**To create a restore point from the SSP-3801 card's web interface:**

1 Open and log into the SSP-3801 card's web interface (see page 26).

2 From the menu, select **Card Configuration** > **Hot Swap**.

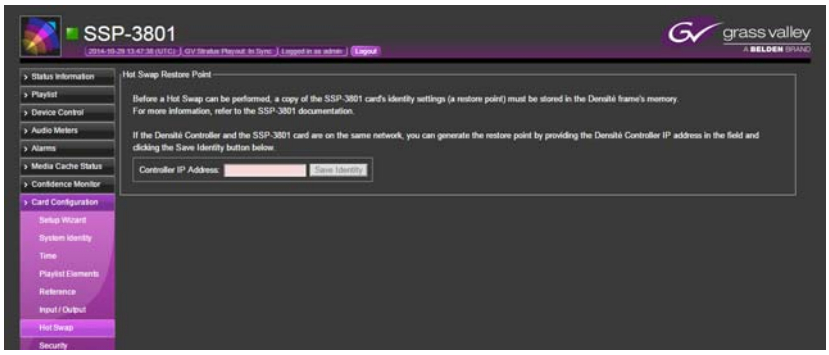



*Fig. 4-6: Hot Swap page*

3 In the **Controller IP Address** field, type the IP address of the Densité frame hosting the card.

4 Click **Save Identity**.

# Managing the user profiles

To access the web interface for the SSP-3801 card, you need to login using a User Profile. Every SSP-3801 card has a default admin account, but you can create other user profiles for the other types of access. You can create two types of User Profiles:

- **Standard User**: has access to the following features:
  - Status Information
  - Playlist/Manual Events
  - Device Control
  - Audio Meters
  - Alarms (view only)
  - Media Cache Status
  - Confidence Monitor
  - Log Viewer
  - Diagnostics
  - Restart
  - Card Options
- **Administrator**: has everything that a Standard User would have, plus:
  - Card Configuration
  - Channel Configuration
  - Software Upgrade
  - Status Element Debug

> IMPORTANT
>
> If you are configuring the SSP-3801 card for the first time, we strongly recommend that you change the default system password for the "admin" account. Although you can change its password, you cannot rename or delete the admin account.
>
> If you do not change the default system password, an alarm is triggered, and a reminder will appear each time you log in using the default password (unless you selected "Don't remind me").

**To manage the User Profiles:**

1. Open and log into the SSP-3801 card's web interface (see page 26).
2. From the menu, select **Card Configuration** > **Security**. The **Users** section contains the current list of user profiles.
3. To create a user profile, click **Add**. The **User Details** dialog box appears.

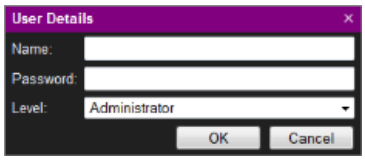



*Fig. 4-7: User Details dialog box*

4 Enter the following information about the new user profile:
   - **Name**: enter the name to use when logging into the system (this field is case-sensitive).
   - **Password**: enter the password for this user profile. *It is a best practice for passwords to contain a combination of letters and numbers.*

     Note: Passwords are case-sensitive.

   - **Level**: select the level of access for this user. You have two choices:
     - **Standard User**: restricted access to manage media and add events to the Timeline
     - **Administrator**: full access to all the SSP-3801 features
5 Click **OK**.

**To edit or delete a user profile:**

1 In the **Users** section, select the user profile you want to modify.
2 Click one of the following:
   - **Edit**: opens the **User Details** dialog box. Change the user profile fields and click **OK**.
   - **Delete**: the user profile is removed from the list of profiles. This user will no longer be able to log into the system.

## Managing the Device Access security settings

The SSP-3801 card is configured with the firewall enabled by default that only accepts connections using HTTPS by default. You can configure the firewall to grant access from other protocols; however, a security alarm will be triggered if the FTP or SSH protocols are enabled or if HTTPS Redirection is disabled while the HTTP protocol is enabled. You can change the severity of the alarm by changing its GSM Error Level to Normal (see "Managing card alarms" in the SSP-3801 User Guide).

**To manage the security settings:**

1 Open and log into the SSP-3801 card's web interface (see page 26).
2 From the menu, select **Card Configuration** > **Security**.
3 In the **Device Access Settings** section, you can select **Enable** to grant access to specific protocols or select **Disable** to deny access. *An alarm is raised if the FTP Access or SSH Access protocols are enabled or if HTTPS Redirection is disabled while HTTP Access is enabled.*
   - **FTP Access**: Allows incoming FTP connections. Default: disabled.
   - **SSH Access**: Allows incoming SSH connections (secure shell). This protocol is usually only used by technical support. Default: disabled.
   - **HTTP Access**: Allows incoming HTTP connections. No alarm is raised if it is enabled in conjunction with HTTPS Redirection otherwise an alarm is raised. Default: enabled.
   - **RTSP Access**: Allows incoming RSTP connections in order to use the H.264 confidence monitor. *IMPORTANT: When RTSP Access is enabled, all ports between*

*6970 and 65535 are opened for UDP access; therefore, this should only be done if the card is located on a secure network.* Default: disabled.

- **HTTPS Redirection**: Redirects the user to use HTTPS (secure) when connections are made using HTTP. It must be enabled if HTTP Access is enabled otherwise an alarm is raised. Default: enabled.

4 If you enabled FTP Access, type the password for the account in the **FTP Password** field.

5 Click **Save**.

> Note: If the FTP Access, SSH Access, or RTSP Access protocols are changed from enabled to disabled, any existing connections will remain functional until the system is restarted (Restart > System Restart).

# Configuring HCO Control to support card redundancy

An HCO device can be used to set up automatic failover between two SSP-3801 cards. The HCO device can be installed in the same Densité frame as the cards or accessible on the network. The HCO Control page only appears when an HCO is available in the system and the OPT HCO license is enabled.

> Note: If you intend to configure the HCO device to automatically perform the failover to the backup card in the event of a failure on the main card, the Switch Mode on the HCO device must be set to the Toggle option.
> The Toggle option enables the HCO device to automatically switch from one input to the other when alarm conditions trigger the switch. It will stay on that input until you manually perform a switch back to the original input or alarm conditions on the input trigger a switch back to the original input. For more information on configuring the HCO device, see the HCO documentation.

**To configure the HCO:**

1 Open and log into the SSP-3801 card's web interface (see page 26).

2 From the menu, select **Card Configuration** > **HCO Control**.

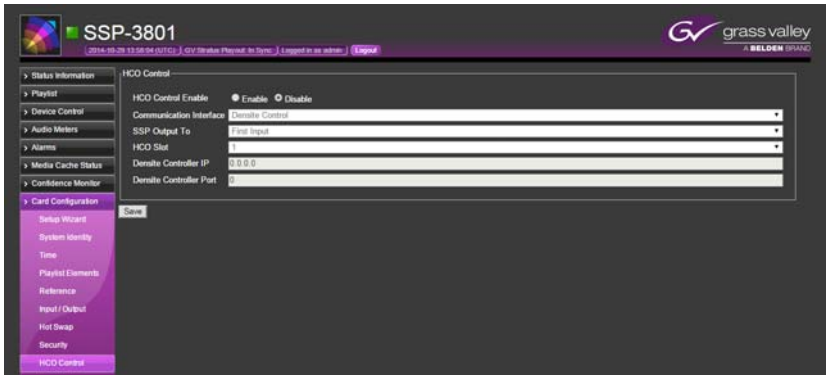



*Fig. 4-8: HCO Control page*

3 For **HCO Control Enable**, select **Enable** to allow the HCO device to automatically perform a failover to the backup card in the case of a failure on the main card. If you want to disable HCO Control, select **Disable**.

4 In the **Communication Interface** list, click the location of the HCO device:
   - **Network**: select if the HCO device is installed in a Densité frame elsewhere in the network.
   - **Densité Control**: select if the HCO device is installed in the same Densité frame as the SSP-3801 cards are installed.
5 In the **SSP Output To** list, click the HCO input to which the card is wired.

> Note: Only the first and second inputs are supported on HCO devices that offer three inputs. If the HCO device switches to an input other than the supported inputs (by using iControl or the front panel menu), both SSP-3801 cards will report their roles as Backup and could potentially cause an off-air situation.

6 In the **HCO Slot** list, click the slot number in the Densité frame where the HCO device is installed.
7 If Network was selected, enter the IP address and port where the HCO device is installed:
   - In the **Densité Controller IP** field, type the Densité Controller's IP address.
   - In the **Densité Controller Port** field, type the port number used by the Densité Controller to communicate with the cards.
8 Click **Save**.

   To verify if you have selected the correct input, the correct Role should appear in the header when the input you selected matches the physical HCO input connected to the card.

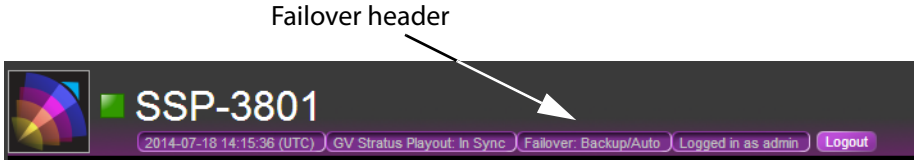



*Fig. 4-9: Failover header*

# Configuring an external router for switching between live events

To be able to switch between multiple live feeds, you must connect and configure an external video router. The router is connected to both the card's SDI A and SDI B inputs. Once router control is configured, the card manages which router source on which input is sent to PGM (SDI Out) output.

A router system is usually comprised of two components: the router controller and the router frame. The router frame connects the video sources to destinations, which is called making a crosspoint. The router controller controls when the router frame makes the crosspoint and to which destination the video source is sent.

The card communicates with the router controller through a network control connection to signal when to switch crosspoints. The switching between the sources can be made by source events in the playlist.

The expected flow of events between the card and the router is:

- The card sends a crosspoint (XPT) request to the router controller.
- The router controller receives the request from the card, triggers the router frame to make the crosspoint, and then checks that the router frame has made the crosspoint.
- The router controller sends a message to the card confirming that the crosspoint has been made.

In reality many router controllers send the crosspoint complete confirmation message before it checks if the crosspoint has been made or even before the router frame has actually made the crosspoint. To prevent unwanted effects in the playout, you can configure the Post Router Tally Delay to accommodate for the time between the confirmation message and the actual crosspoint being made by the router frame. It is important to determine the correct value to configure as the Post Router Tally Delay which is specific to your system.

As the card manages the selection of the SDI inputs, it biases the routing so the primary live feed is on the SDI A input. This enables the live feed from the router source to be automatically passed from the SDI A input to the PGM (SDI Out) output via the mechanical bypass relay in case of power loss or card failure, therefore ensuring that playout continues uninterrupted. It also prevents an operator from having to figure out which input is in use if the wrong source or a bad source is on the PGM output. By biasing the routing to the SDI A input, the operator can be sure that changing the source on the SDI A input will correct the feed on the PGM output.

To understand how the switch between inputs occurs, consider this example. Source event LIVE1 is on air and routed to input A. A second source event, LIVE2, enters the pre-roll window. LIVE2 is routed to input B and goes on air when LIVE1 is done. The card then sends a request to the router controller to also route LIVE2 to input A so both inputs are receiving the same feed. Once the card receives the confirmation message from the router controller and the Post Router Tally Delay has expired, the card switches its PGM output from SDI B to SDI A and the transition on air should be seamless. If the Post Router Tally Delay value is too short, a flash of LIVE1 may be seen on air when the switch is performed as the router will not have completed its route. For a seamless transition, the Post Router Tally Delay value must be correct.

Note: The card only supports ASCII 7-bit printable characters for mnemonics, the asset IDs, and paths. For more information, see "About the supported characters for asset IDs, paths, and mnemonics" in the SSP-3801 User Guide.

**To configure the router:**

1. Open and log into the SSP-3801 card's web interface (see page 26).
2. From the menu, select **Card Configuration** > **Router Control**.

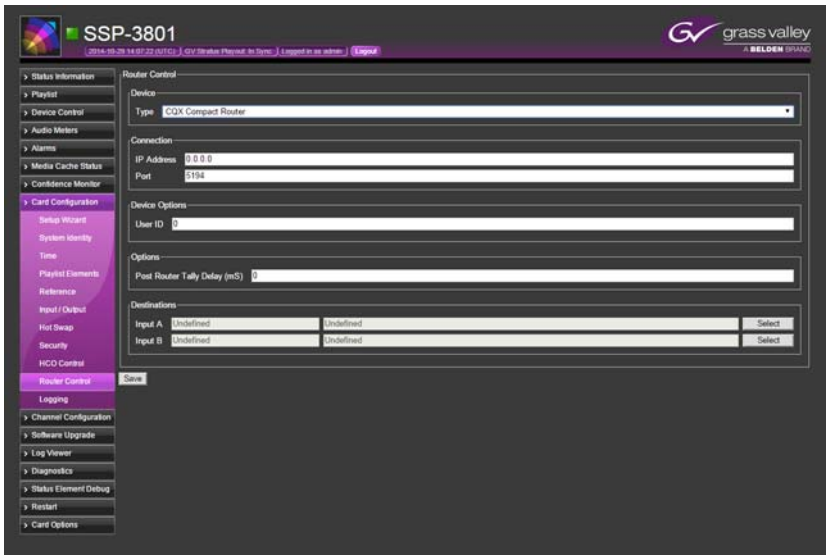



*Fig. 4-10: Router Control page*

3 In the **Type** list, select the type of router connected to the card. Click:
   - **None**: to disable Router Control.
   - **Virtual Router**: to enable a virtual test router. The virtual router does not perform video switches, but allows the card to act as though an actual router is connected so it can be used to test the behavior. For example, a Source primary event added to the playlist will act as though it played out and the Log Viewer will be updated, but no actual video switching is performed.
   - **CQX Compact Router**: to enable control of an NVision Compact CQX router.
   - **NV9000 Router Controller**: to enable control of an NV9000 router control system.
4 Depending on the type of device selected, the options on the page will differ. Configure the following as required by the selected type:

| Type | Configuration |
|---|---|
| **None** | No configuration is required. |
| **Virtual Router** | **To configure the virtual router:**<br>1 In the **Router Size** field, type the number of sources and destinations (between 0 and 8,000) that you want available for the test. For example, if you type 64, the virtual router will support 64 sources and 64 destinations.<br>2 In the **Post Router Tally Delay** field, type the value in milliseconds (between 0 to 2000 ms) representing the delay between when the message is received from the router controller confirming that the switch has been made and when the actual switch is performed by the router frame. Since the virtual router does not actually perform video switches, any value can be used.<br>3 The router settings must be saved and the router must be online before the router destinations can be configured. Click **Save**.<br>4 In the **Destinations** section, define the router destinations for the inputs on the card. For each input:<br>• Click the **Select** button.<br>• Click **Refresh** to obtain a list of the available router sources.<br>• Click the desired router source and click **Select**. To filter the list, type the name of the router source in the **Search** field. To order the list, click the arrows in the column headers. |

| Type | Configuration |
|---|---|
| **CQX Compact Router** | **To configure the CQX Compact router:**<br>1 In the **IP Address** field, type the IPv4 address in dotted quad format of the NVision Compact CQX router.<br>2 In the **Port** field, type the port number used for communication with the NVision Compact CQX router over the UDP protocol. Normally, the port number should be 5194 unless it was configured differently on the router itself. The card will automatically open the defined port in the SSP-3801's firewall.<br>3 In the **User ID** field, type the user ID configured in the NVision Compact CQX router. Normally, the user ID should be 61441 unless it was configured differently on the router itself.<br>4 In the **Post Router Tally Delay** field, type the value in milliseconds (between 0 to 2000 ms) representing the delay between when the message is received from the router controller confirming that the switch has been made and when the actual switch is performed by the router frame.<br>5 The router settings must be saved and the router must be online before the router destinations can be configured. Click **Save**.<br>6 In the **Destinations** section, define the router destinations for the inputs on the card. For each input:<br>• Click the **Select** button.<br>• Click **Refresh** to obtain a list of the available router sources.<br>• Click the desired router source and click **Select**. To filter the list, type the name of the router source in the **Search** field. To order the list, click the arrows in the column headers. |

| Type | Configuration |
|---|---|
| **NV9000 Router Controller** | **To configure the NV9000 router control system:**<br>1 In the **IP Address** field, type the IPv4 address in dotted quad format of the NV9000 router control system.<br>2 In the **Port** field, type the port number used for communication with the NV9000 router control system using a TCP network connection. Normally, the port number should be 9193 unless it was configured differently on the NV9000 router control system itself.<br>3 In the **User ID** field, choose one of the following:<br>• To generate a default user ID, select **Automatic**.<br>• To specify the user ID configured in the NV9000 router control system, select **Manual** and type the user ID in the field. A manually entered user ID is required when a specific user ID is configured in the NV9000 router control system using the SE Utilities tool for use with its access controls. In this case, the same user ID must be used by the SSP-3801 card. For more information, please refer to NV9000 router control system's documentation.<br>4 In the **Post Router Tally Delay** field, type the value in milliseconds (between 0 to 2000 ms) representing the delay between when the message is received from the router controller confirming that the switch has been made and when the actual switch is performed by the router frame.<br>5 The router settings must be saved and the router must be online before the router destinations can be configured. Click **Save**.<br>6 In the **Destinations** section, define the router destinations for the inputs on the card. For each input:<br>• Click the **Select** button.<br>• Click **Refresh** to obtain a list of the available router sources.<br>• Click the desired router source and click **Select**. To filter the list, type the name of the router source in the **Search** field. To order the list, click the arrows in the column headers. |

5 Click **Save** to save the changes and activate router control.

# Configuring the serial port for the Emergency Alert System (EAS)

The external EAS receiver communicates the text for the EAS message and the message alert level via one of the serial ports (COM 1 or COM 2) available on the SSP-3801 card. For more information on EAS configuration, see the SSP-3801 User Guide.

**To configure the serial ports for EAS:**

1 Open and log into the SSP-3801 card's web interface (see page 26).

2 From the menu, select **Card Configuration** > **Serial Ports**.

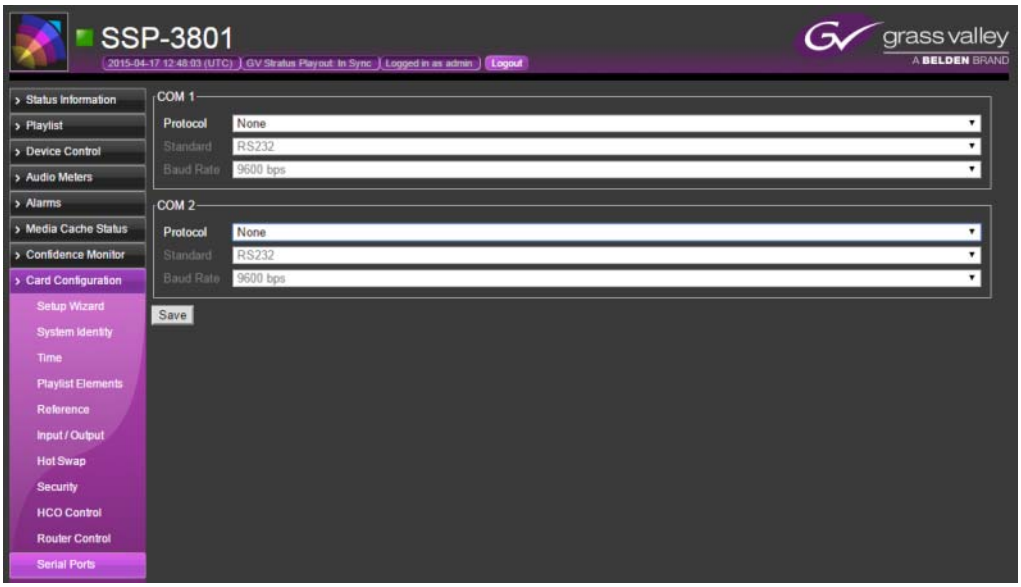



*Fig. 4-11: Serial Ports page*

3 Depending on which COM port is connected to the EAS receiver, complete section COM 1 or COM 2:
   - In the **Protocol** list, click the protocol supported by the EAS receiver.
   - In the **Standard** list, click the serial communication interface used to communicate with the EAS receiver.
   - In the **Baud Rate** list, click the baud rate used to communicate with the EAS receiver.
4 Click **Save**.

# Resetting the configuration settings to factory defaults

If changes to the SSP-3801 card have resulted in a broken configuration or you wish to apply a factory defaults configuration, you can use the Reset Configuration button on the Software Upgrade page to reset all the configuration settings, except the following, to their default values:

- Card Configuration > System Identity settings
- Card Configuration > Security > Users entries
- Card Options

Once the reset is performed, the SSP-3801 card is restored to its factory defaults configuration while retaining the settings from the items listed above.

**To reset the configuration settings:**

1 Open and log into the SSP-3801 card's web interface (see page 26).
2 From the menu, click **Software Upgrade**.
3 Click **Reset Configuration**.

# Recovering from a card failure

**To recover from an SSP-3801 card that has fallen into an unresponsive state:**

1. Remove the affected card from the Densité frame.
2. Reinsert the card into the Densité frame, while at the same time holding down the card's **Select** button until the card is acknowledged on the local control panel's display.
3. Take note of the new IP address that has been assigned to the card and is now displayed on the local control panel's display.
4. On a client computer on the same network as the SSP-3801 card, enter the card's new IP address in a web browser. This launches the card's **DFU mode** user interface, which allows you to perform a **software upgrade** or a **factory install** of the SSP-3801 software.

# Verifying the accuracy of the SSP-3801 card's settings

Once you have completed the configuration procedure, we recommend that you verify the summary of the card's settings.

**To view the SSP-3801 card's current settings:**

1. Open and log into the card's web interface (see page 26).
2. From the menu, click **Status Information** and browse through its submenus.

   Each submenu provides the current status of the various SSP-3801 card's settings.

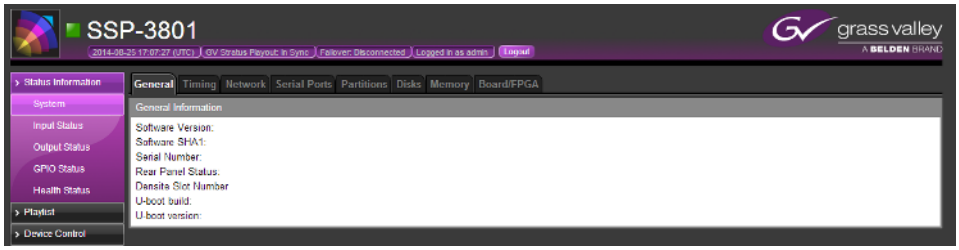



*Figure 4-12. System > General page*

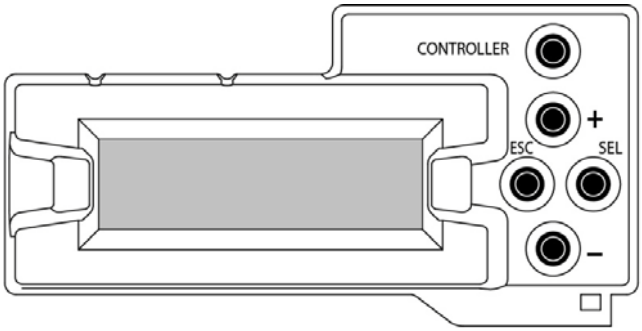
3. Browse through the settings listed to ensure they are correct. If you discover any erroneous settings, return to the appropriate page in the web interface to make the correction.

# A Densité 3 Control Panel Menus

This Appendix lists the menus and sub-menus on the Densité 3 frame's local control panel.

# About the Densité 3 frame's local control panel

The following table identifies the menu items, parameters and settings that are displayed on the Densité 3 frame's local control panel when the SSP-3801 is selected.




Instructions for how to use the local control panel's buttons are provided on page 13.

**To select the commands on the card's control panel:**

1 Press the **Select** button for the card you wish to modify. The name of the card and its slot number appear in the controller panel.

2 Press the +/- buttons to select the menu you wish to view and press **SEL**. The submenu appears in the panel. Press **ESC** to go back one menu.

3 Press the +/- buttons to select the submenu/command you wish to use and press **SEL**. Press **ESC** to go back one menu.

| Status | | |
|---|---|---|
| Active Alarms | | |
| Ref Status | GenLock Status | |
| | URS Mode | |
| | Ext Standard | |

| Status | | |
|---|---|---|
| Network Status | IP Status | ETH1<br>• DHCP Enable > Disable \| Enable<br>• IP address<br>• Net Mask<br>• Gateway<br>• MAC Address<br>ETH2<br>• DHCP Enable > Disable \| Enable<br>• IP address<br>• Net Mask<br>• Gateway<br>• MAC Address |
| | Bonded Enable | Disable \| Enable |
| | Hostname | Displays the domain name for the card. |
| | Link Status | ETH1<br>• Link Status<br>• Link Duplex > Full Duplex \| Half<br>• Link Speed > 10 \| 100 \| 1000 MBPS<br>ETH2<br>• Link Status<br>• Link Duplex> Full Duplex \| Half<br>• Link Speed > 10 \| 100 \| 1000 MBPS |
| Serial Status | COM 1 | Port Counters<br>• RX:0<br>• TX:0<br>• FE:0<br>• PE:0<br>• BRK:0<br>• OE:0 |
| | COM2 | Port Counters<br>• RX:0<br>• TX:0<br>• FE:0<br>• PE:0<br>• BRK:0<br>• OE:0 |

| Status | | |
|---|---|---|
| Video Inputs | A Input | • Video Standard<br>• Video Mismatch > False \| True<br>• Video Status > Unlocked \| Locked |
| | B Input | • Video Standard<br>• Video Mismatch > False \| True<br>• Video Status > Unlocked \| Locked |
| | Fill-1 Input | • Video Standard<br>• Video Mismatch > False \| True<br>• Video Status > Unlocked \| Locked |
| | Key-1 Input | • Video Standard<br>• Video Mismatch > False \| True<br>• Video Status > Unlocked \| Locked |
| AES | • Pair 1 CH1 > Error Unlocked \| Locked<br>• Pair 1 CH2 > Error Unlocked \| Locked | |
| Timecode | VITC | • BAD INT \| GOOD INT<br>• +00:00:00 ND |
| | LTC | • BAD INT \| GOOD INT<br>• +19:19:19 ND |
| | URS | • BAD INT \| GOOD INT<br>• +00:00:00 ND |
| | ATC_LTC | • BAD INT \| GOOD INT<br>• +00:00:00 ND |
| | ATC_VITC1 | • BAD INT \| GOOD INT<br>• +00:00:00 ND |
| | ATC_VITC2 | • BAD INT \| GOOD INT<br>• +00:00:00 ND |
| Serial Number | Displays the unique serial number for this card. | |
| Rear Panel Type | SSP-3801 3QRP | |

| Reference SRC | |
|---|---|
| External Ref | |
| SDI PGM IN | |
| URS | |

| Ethernet Options | |
|---|---|
| Bonded Mode | |
| Nameserver 1 | 000.000.000.000 |
| Nameserver 2 | 000.000.000.000 |

| Ethernet Options | | |
|---|---|---|
| ETH1 | DHCP Config | |
| | IP Address | |
| | Netmask Address | |
| | Gateway Address | |
| ETH2 | DHCP Config | |
| | IP Address | |
| | Netmask Address | |
| | Gateway Address | |
| Restart Network | | |

| Version | displays the current version of the control panel software |
|---|---|

| Options | |
|---|---|
| OPT HCO | |
| OPT 2SSD | |
| OPT CLIP | |
| OPT BR | |
| OPT PROXY | |
| OPT RTR | |

| Serial Ports | | |
|---|---|---|
| COM 1 | Baud Rate | • 1200 BPS<br>• 1800 BPS<br>• 2400 BPS<br>• 4800 BPS<br>• 9600 BPS<br>• 19200 BPS<br>• 38400 BPS<br>• 57600 BPS<br>• 115200 BPS |
| | Standard | • RS422<br>• RS232 |

| Serial Ports | | |
|---|---|---|
| COM 2 | Baud Rate | • 1200 BPS<br>• 1800 BPS<br>• 2400 BPS<br>• 4800 BPS<br>• 9600 BPS<br>• 19200 BPS<br>• 38400 BPS<br>• 57600 BPS<br>• 115200 BPS |
| | Standard | • RS422<br>• RS232 |

| Test Pattern | Disable \| Enable |
|---|---|

| Setup | | |
|---|---|---|
| Video Standard | • 625 Line<br>• 525 Line<br>• 1080I/59.94<br>• 1080I/50<br>• 720P/59.94<br>• 720P/50 | |

# Contact Us

## Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478-4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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