



grass valley

A **BELDEN** BRAND

iControl Solo

STANDALONE PC-BASED CONTROL

User Guide

M786-1600-335

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www.grassvalley.com

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1 Introduction

Overview

This guide describes how to configure and use iControl Solo for controlling and monitoring devices required in the broadcast signal path for interfacing, routing and distribution. iControl Solo is designed and produced by Grass Valley.

iControl Solo is a standalone, PC-based control application which offers affordable control directly from a desktop or laptop that has Windows 7. It provides easy list-based control and configuration of up to 100 Densité Series and/or Imaging Series modules. Operators are provided with quick access to devices and parameters for fast and easy control. More advanced control requirements demanding simultaneous, multi-device monitoring and error logging, and a customized, highly graphical user interface, can be met with the iControl Application Server. A USB-to-RS-422 adapter (IC-USB) used to connect Imaging Series housing frames is sold separately.

In brief, iControl Solo offers the following key features and benefits:

- an iControl Solo window with different sorting options, similar to iControl Navigator,
- drivers for most Grass Valley Densité and Imaging devices,
- the ability to interface up to 100 devices,
- easy problem resolution using status indicators,
- ideal for *set and forget* operations.
- **[OPTIONAL]** a loudness logging and analysis service (IC-LOUDNESS-LOG-1-SOLO loudness logging option for one device to be installed on iControl Solo)

Differences Between iControl Solo and iControl

iControl Solo *does not*:

- provide thumbnails,
- use a GSM (Global Status Manager) for central management of alarm conditions and error logging,
- support audio level meters (ALMs),
- support Virtual Service Managers for configuring and controlling Grass Valley proc amp devices,
- support Router Manager for configuring and controlling routing switchers.

Getting Started with iControl Solo



Key Concepts

Communicators

Communicators are software components that implement a specific protocol for controlling a family of devices.

Communicators in iControl Solo are responsible for the discovery process whereby a PC or laptop detects Grass Valley devices connected to its serial ports or on the LAN, and initiates services to control these devices.

A communicator is an application that handles the communications between your PC or laptop and Densité, or Imaging-series frames on the network. The four types of communicators (Imaging, Densité, and GV Node) are configurable services in iControl Solo.

Imaging Communicators allow you to control signal processing and distribution performance modules housed in Grass Valley Imaging series (Symphonie, Quartet 2) frames. The Imaging series frames are connected to your PC or laptop via RS-422 serial ports.

Densité Communicators and GV Node Communicators allow you to control interfacing and distribution modules housed in Densité and GV Node frames, respectively. These frames are connected to the network via their controller card's Ethernet port.

To be able to use a communicator, the service must be configured. If the service is not configured, you will not be able to control the devices even if they are connected. If the service is configured, but there are no cards connected, only the service will be displayed in iControl Solo.

Densité Manager

Densité Manager is a service that allows you to manage multiple Densité, or GV Node frames (using Densité Communicators).

For Densité Manager to discover cards and begin controlling services, you need to specify the IP addresses of the Densité, or GV Node frames that it will manage. Depending on the model, a frame may contain up to 24 devices. If you do not add any addresses, or if you add an incorrect address, the Densité Manager will not discover any frames.

License Management

License management is the method by which iControl Solo administrators can request, activate, and distribute licenses for options. The majority of tasks related to license management have as a starting point the Grass Valley License Manager page.

Concept	Description
License	An agreement to use a specific software module or collection of modules under specific terms
Grass Valley License Manager	Web-based license management for end-users.
Software Feature	A licensable portion of software.
License request file	A file iControl Solo generates that you send to Grass Valley by e-mail in order to request licenses for one or more optional features.
Activation file	A file Grass Valley sends to you that unlocks and activates one or more optional features.

See also

For more information about licensing, see [Licensing Options](#), on page 11.

Detailed Directions

To set up your iControl Solo system you will need to:

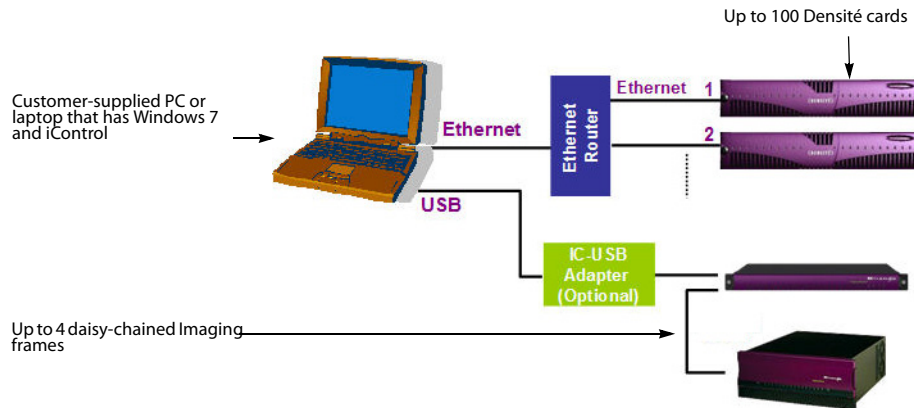
- connect the Densité, GV Node, and Imaging frames that house the cards you wish to control
- connect the Kaleido-Solo units you wish to control
- configure Densité, GV Node, and Imaging services in iControl Solo
- configure Kaleido-Solo services in iControl Solo

Connecting Densité and Imaging Series Housing Frames

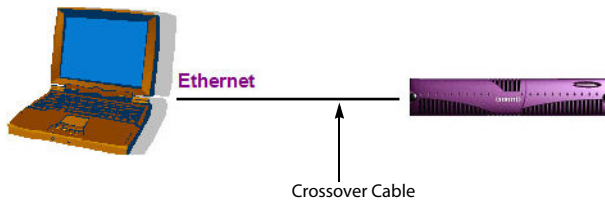
You can connect your iControl Solo PC to Densité frames and Kaleido-Solos over the network through an Ethernet router, or directly via a crossover cable. Imaging frames (Symphonie and Quartet 2) are connected to your PC or laptop using either the IC-USB device, or an RS-232-to-RS-422 converter.

IMPORTANT: iControl Solo is supported on Windows 8 and Windows 7 platforms only

Client PCs running iControl Solo must have Windows 8 or Windows 7 installed. Windows XP is not supported.



Connecting multiple Densité Series frames through a router, and up to 4 Imaging Series frames via IC-USB



Connecting a single Densité Series frame without a router

See also

For more information about the IC-USB device, see [Installing IC-USB](#), on page 81.

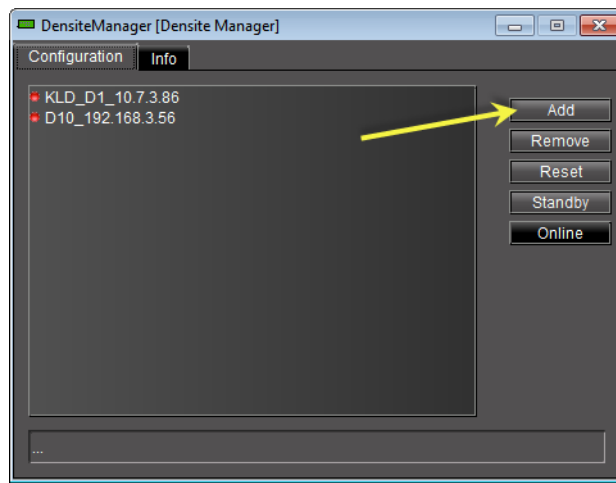
Adding Densité Communicator Services

To add a Densité Communicator service

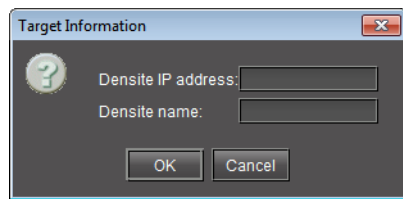
1. Open iControl Solo and double-click **DensiteManager** in the logical view.



2. In **DensiteManager**, click **Add**.



3. In the **Target Information** window, type the frame's IP address and a descriptive name for the new Densité Communicator service, and then click **OK**.



The new Densité Communicator will be started and added to the list. iControl Solo will query the corresponding Densité frame and any devices (e.g. cards) it discovers will be displayed in iControl Solo.

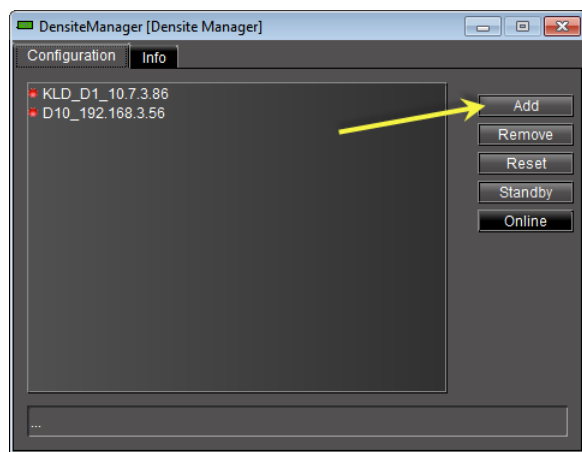
Adding Kaleido-Solo Services

To add a Kaleido-Solo service

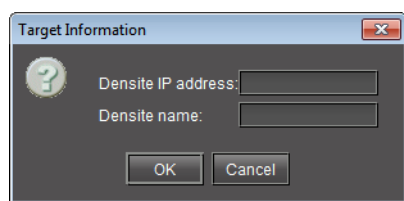
1. Open iControl Solo and double-click **DensiteManager** in the logical view.



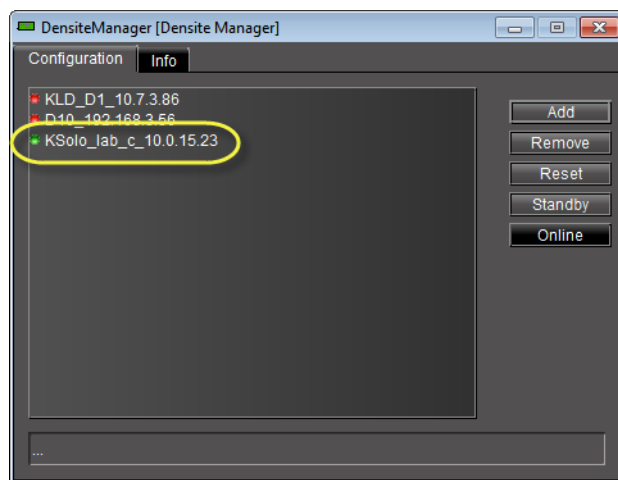
2. In **DensiteManager**, click **Add**.



3. In the **Target Information** window, type the Kaleido-Solo's IP address and a descriptive name for the new service, and then click **OK**.



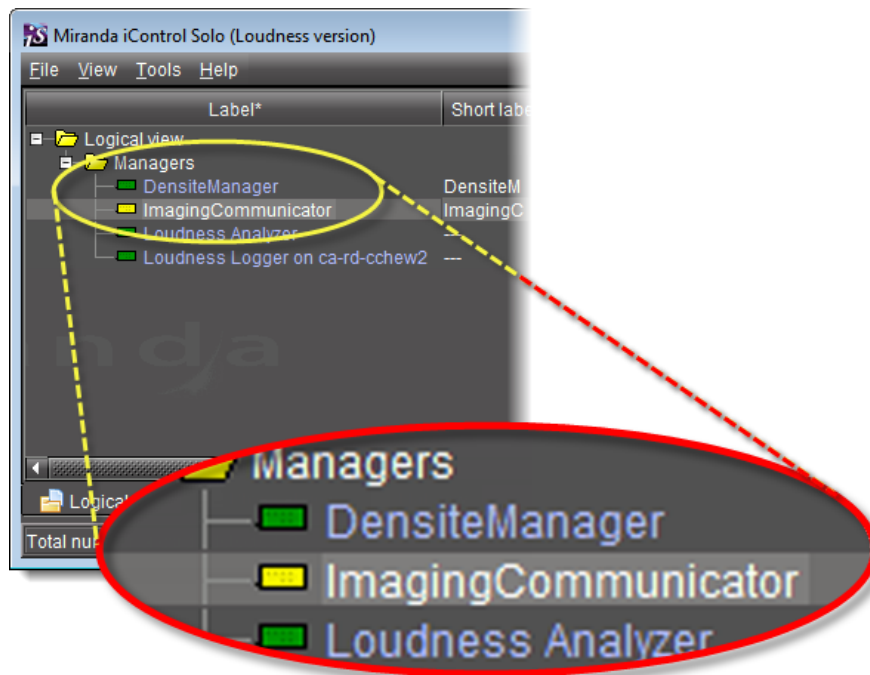
The new Kaleido-Solo will be started and added to the list.



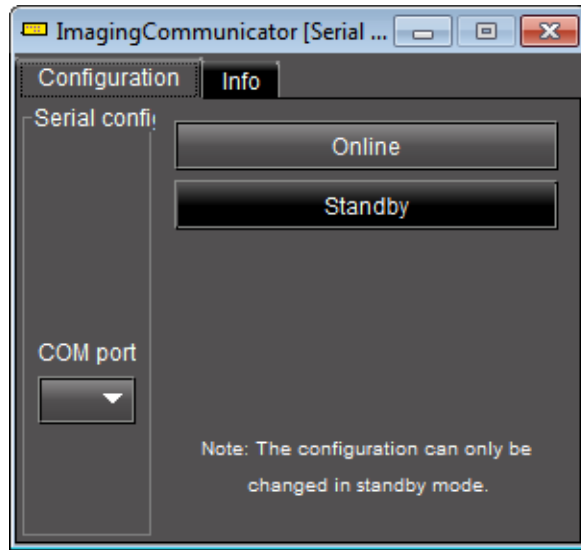
Configuring Imaging Communicator Services

To configure the Imaging Communicator service

1. Open iControl Solo, and double-click **ImagingCommunicator** in the logical view.



2. In **ImagingCommunicator**, click **Standby**.



3. In the **COM Port** list select the COM port you chose when you installed the IC-USB device

Note: **COM port** can only be selected in **Standby** mode.

4. Click **Online** to activate the selected port.

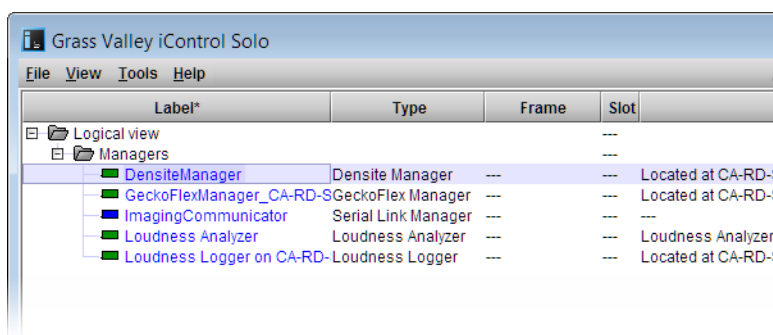
The Imaging Communicator service will be restarted and iControl Solo will query all Imaging Series frames interfaced to your computer. Any devices (e.g. cards) housed in the frames will be displayed in iControl Solo.

Adding GV Node Services

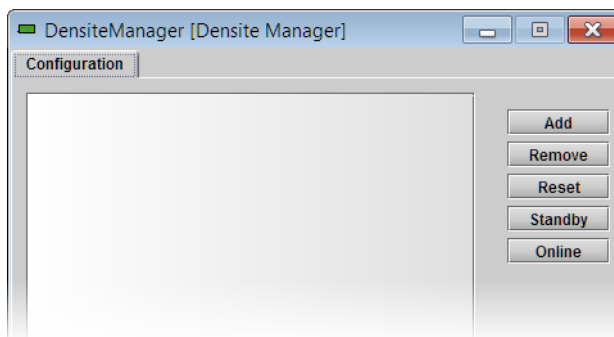
For iControl Solo to monitor and control a GV Node frame, a GV Node service must first be added to the list of communicators in Densité Manager.

To add a GV Node service

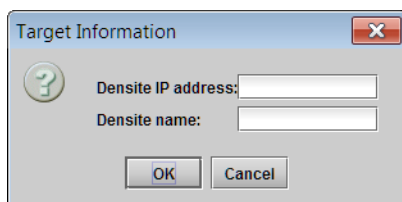
1. In iControl Solo's *Logical view*, expand the *Managers* folder, and then double-click the Densité Manager element.



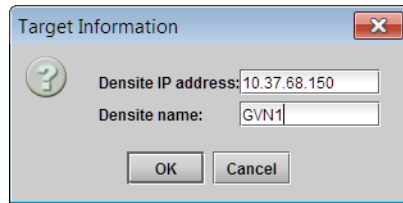
The Densité Manager control panel opens.



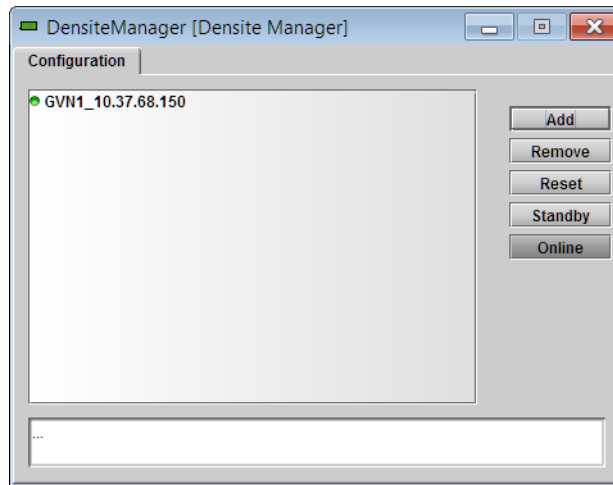
2. In the Densité Manager control panel, click **Add**.
The **Target Information** window opens.



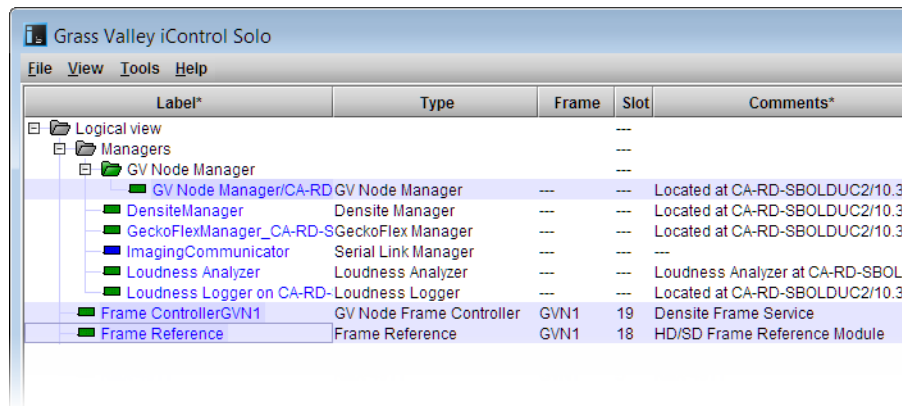
3. In **Target Information**, type the GV Node frame's IP address, and a name to identify the new service associated with this particular frame.



4. Click **OK**. The new GV Node service starts and is added to the list of Densité communicators in the Densité Manager control panel.



5. Close the Densité Manager window.
The *GV Node Manager* control panel (see [GV Node Manager](#) on page 33), and control panels for all modules housed in your GV Node frame are now available in iC Navigator.



Logical view showing GV Node Manager, Frame Controller, and Frame Reference

Note: Modules for which a Densité card package is not yet included in iControl Solo (e.g., IFM-2T, XIO-4901, KMX-4911) will only appear after you have uploaded the appropriate package to your iControl Solo installation (see [Uploading a Densité Card Package](#), on page 75).

Licensing Options

Perform the tasks listed in the following workflow in the prescribed sequence.

Workflow: Requesting and Activating a License for iControl Solo

Workflow: Requesting and activating a license for iControl Solo

1.	In iControl Solo, open Grass Valley License Manager (see page 11).
2.	Request the desired license (see Requesting a License , on page 11).
3.	Wait for Grass Valley to return an activation file.
4.	Upload the activation file to the PC on which you have iControl Solo installed, and then activate the license (see Activating a License , on page 12).

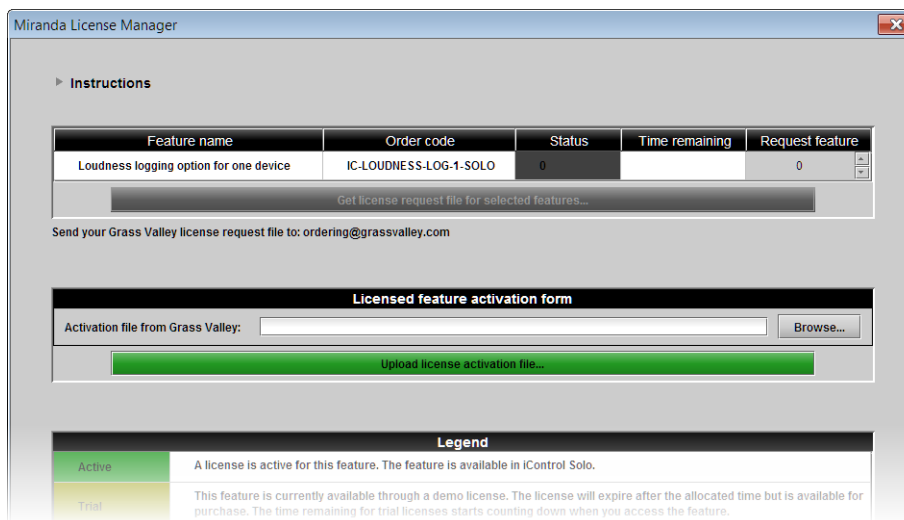
Opening Grass Valley License Manager

REQUIREMENT

Before beginning this procedure, make sure you have opened iControl Solo (see [page 34](#)).

To open Grass Valley License Manager

- In iControl Solo, on the **Help** menu, click **License**.
Grass Valley License Manager appears.



Requesting a License

IMPORTANT: When licensing for the IC-LOUDNESS-LOG1-SOLO option, the number of licenses must match the number of devices you wish to log from (for example, if you have **seven** Kaleido-Solo units, each of which are providing streaming loudness data to your iControl Solo, then you must have **seven** IC-LOUDNESS-LOG1-SOLO licenses).

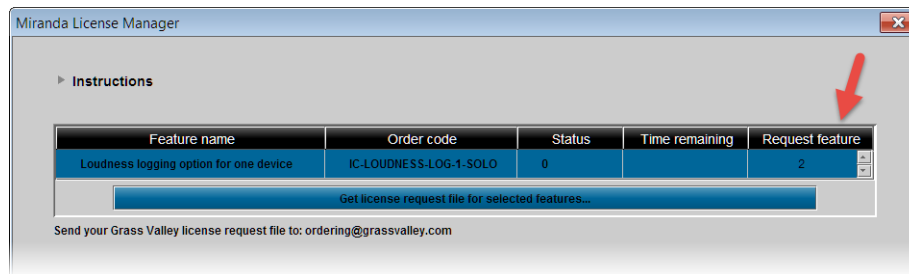
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have opened **Grass Valley License Manager** (see [page 11](#)).
- You are able to send and receive e-mail on your client PC.

To request a license

1. In **Grass Valley License Manager**, in the **Request feature** column, type the number of licenses you wish to purchase.



Alternatively, you may use the up and down arrows.

2. Click **Get license request file for selected features**.
A confirmation message appears.
3. Validate the information listed in the confirmation, and if satisfactory, click **OK**. If not satisfactory, click **Cancel**.
If you clicked **OK**, you are prompted to save the downloaded license request file.
4. Save the MLR file to a convenient location on your hard drive.
5. In your e-mail client application, create a new e-mail with the following recipient:
ordering@grassvalley.com
6. Attach to this e-mail the MLR file you saved to your local hard drive in [step 4](#), and then send the e-mail.
The request for an activation file is sent to Grass Valley. Wait until Grass Valley provides you with the activation file before proceeding to the next task in the workflow (see [Workflow: Requesting and Activating a License for iControl Solo](#), on page 11).

See also

For more information about licensing, see [License Management](#), on page 4.

Activating a License

IMPORTANT: When licensing for the IC-LOUDNESS-LOG1-SOLO option, the number of licenses must match the number of devices you wish to log from (for example, if you have **seven** Kaleido-Solo units, each of which are providing streaming loudness data to your iControl Solo, then you must have **seven** IC-LOUDNESS-LOG1-SOLO licenses).

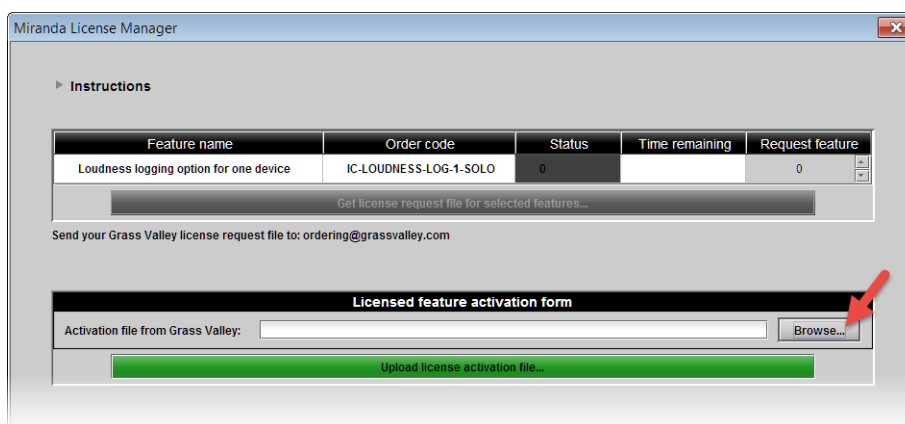
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have opened **Grass Valley License Manager** (see [page 11](#)).
- You have received an activation file from Grass Valley and it is stored on your client PC's hard drive (either a V2C file or a ZIP file).

To activate a license

1. In **Grass Valley License Manager**, in the **Licensed feature activation form** area, click **Browse**.



A file browser window appears.

2. Navigate to the appropriate activation file.

IMPORTANT: Activation files may be V2C or ZIP files

The file Grass Valley sends back to you may have a V2C suffix or a ZIP suffix. In either case, the steps to follow are the same.

3. Select the file, and then click **Open**.
In **Grass Valley License Manager**, the path and file name of the desired activation file appear next to the **Browse** button.
4. Click **Upload license activation file**.
A confirmation window appears.
In **Grass Valley License Manager**, in the row corresponding to the feature for which you bought licenses, the **Status** column displays the number of active licenses you have.

See also

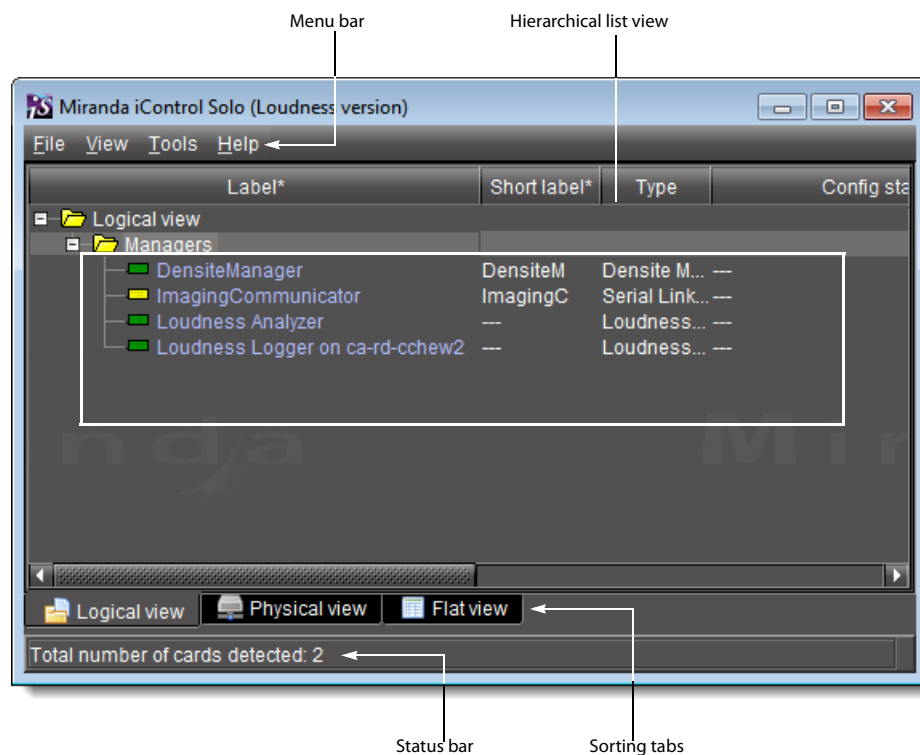
For more information about licensing, see [License Management](#), on page 4.

3 Using iControl Solo

Key Concepts

iControl Solo Window

When you open iControl Solo, you see the menu bar, a hierarchical list view, sorting tabs for three different iControl Solo views, and a status bar.





The *menu bar* provides access to iControl Solo's main features.

The *status bar* is where iControl Solo displays messages related to its current operations.

The *sorting tabs* are a way of filtering the information to include all devices or a subset.

The *hierarchical list* is a representation of all the devices interfaced with iControl Solo.

You can use the plus  and minus  buttons in the hierarchy to navigate the hierarchical list by expanding and collapsing folders and groups (see [Managing Device Groups](#), on page 35 for details).

iControl Solo shows the current status of every device and service within your iControl Solo system. By default, iControl Solo displays the following information for each device:

Status icon	Green (OK), yellow (warning), red (error), or grey (not connected) (see Alarm Status , on page 24).
Label	The device type (by default) or a user-specified name. The text color reflects the device configuration status. See: <ul style="list-style-type: none">• Changing Device Information on page 35• Reference Configuration on page 24• Adding Cards to the Reference Configuration on page 36• Removing Cards from the Reference Configuration on page 37
Short label	Abbreviated 8-character label.
Source ID	Name of the signal source.
Device type	The device type.
Comments	Optional; may be entered by the user.
Config status	Whether the device is or is not part of the Reference Configuration, also if there is a mismatch between the actual and defined device (see Reference Configuration , on page 24).
Frame	Name of the frame housing the device (when applicable).
Slot	Number of the slot where the device is located inside the frame (when applicable).

Control Panels and Device Parameters

Most Grass Valley devices can be controlled using *control panels*. A control panel is a software interface that lets you monitor and control various device parameters.

Note: Grass Valley cards are shipped with Installation & Operation Guides that provide detailed descriptions of their respective control panels, along with instructions on their use.

To access the control panel for a device, double-click the device in iControl Solo. Alternatively, right-click the device name, and then click **Show control panel** on the shortcut menu.

The device name is displayed at the top of its control panel, along with a *dashboard* containing one or more icons representing the status of key device parameters. Error conditions are indicated by color and by a text message that appears below the dashboard. If more than one error condition is present, hold the pointer over an icon to continuously display its associated error message; otherwise the display cycles through all reported errors.

Note: If the *Control* icon on the dashboard is yellow, this indicates that local card control is active—the card is being controlled from a local hardware control panel. In such a case, any changes made using the iControl Solo interface will have no effect on the card.



When control panels are open their names are added to the **View** menu. To bring a specific panel to the foreground, click its name on the **View** menu. To close all open panels at once, click **Close all control panels**.

Control Panel Tabs

Note: For more information on a control panel, please refer to the Installation and Operation Guide for the corresponding device.

The table below lists common control panel tabs and their typical purposes:

Tab	Description
Input	Allows input selection, second input operation mode selection, and control of the deglitcher and freeze functions.
Video Processing	Contains color-correction parameters that apply to the input signal.
Video Output	Allows control over several aspects of the high definition and standard definition video output: aspect ratio conversion, timing control, image quality processing, metadata insertion.
Audio Processing	Provides audio processing and delay parameters for the embedded or discrete audio input channels. These parameters affect both the output audio channels (embedded and AES) and the audio channels sent to other companion cards.
Audio Output	Provides extended audio processing for the 16 audio channels embedded in the HD/SD outputs, including audio channels mixing and audio embedding mode.
Timing	Provides access to timing adjustments which affect the signal outputs.
Factory/Presets	Allows user and device profile management, and restoring of a device's factory default configuration.
Options	Describes available options for the device, and provides information on how to enable or disable them.
Alarm Config.	Opens a separate window where alarm status can be monitored and configured.
Info	Allows viewing and modifying information about a device (e.g. labels, source ID, comments) to help identifying a specific device in a complex setup.

Info Control Panels

The Info control panel is available for all device types. The Info panel includes device identification information such as a label, a short label, the device type, comments, source ID, config status, frame, and slot. You can display the Info panel from the device control panel, or you can right-click a device in iControl Solo and then click **Show info control panel** from the shortcut menu.

From the Info panel, you can change the name of the selected device and type comments. By default, the device name takes the type identification; however, you will find it helpful to rename devices using meaningful names. Once you change the device name in the control panel, the new name will be displayed in iControl Solo, making the device easier to locate.

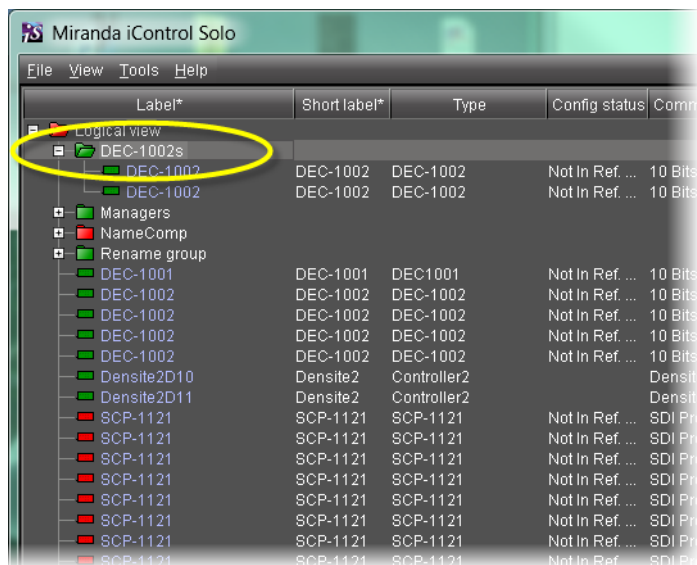


Example of an Info control panel for a specific device

Devices Groups

iControl Solo allows you to organize devices into logical groups, making them easier to locate and to manage. A *device group* is a folder into which you drag selected devices. You can create as many device groups and subgroups as you want.

When you create a device group, you automatically create a virtual alarm that displays the overall status of the member devices. The color of the device group's folder icon will change when one or more of its members displays an error or warning status. For example, if one member device changes status as a result of a critical error, then the group's folder icon will turn red. If no devices are assigned to a group, its folder icon will be white.



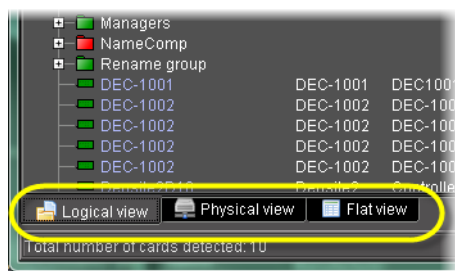
New device group folder (circled)

Note: Device groups can only be created in (and are only visible in) iControl Solo's Logical sort mode.

Views

Sorting allows you to determine the way in which devices will be arranged for display in iControl Solo.

Three views are available by clicking tabs at the bottom of iControl Solo.



iControl Solo tabs (circled)

- **Logical view** displays all active services and devices interfaced with iControl Solo. The devices and services may be organized into groups. Groups and their contents are arranged in alphabetical order. Ungrouped items are displayed at the end of the list. Empty slots are not shown, unless they are in the *Reference Configuration* (see [Reference Configuration](#), on page 24).
- **Physical view** arranges the devices relative to their physical connections and network location. All frame slots are shown. Empty slots show up as **Empty**, unless the card is designated as **In Ref. Configuration**, in which case it will show up as before, but with the description **missing from slot**. Devices are sorted by the name you typed when you

added a Densité Communicator service, and by the number of the serial port where an Imaging frame is connected.

- **Flat view** shows all devices in alphabetical order without any grouping.

Alarm Status

The current status of an alarm determines the color of any on-screen object associated with that alarm: the LED-like icon to the left of a device or service label, an enclosing folder, etc. Each possible alarm status is represented by a color. Alarm statuses are dynamically updated.

iControl Solo implements an industry standard¹ color code definition for all alarms. The following table describes the color scheme used by iControl Solo to display alarm statuses, and how they map to the ITU-TX.733 Recommendation:

Color	Status	ITU-T X.733	Description
White	<i>Pending</i>	—	Alarm exists but has not yet been reported. iControl Solo is waiting for the hardware or driver to update the alarm. White is the default status for a new alarm, before its current status is known. This status should be replaced very quickly, though it might persist as the result of a slow network connection. If a service is stopped, then all alarms originating from this service will revert to pending status.
Green	<i>Normal</i>	<i>Cleared</i>	The device, service, or signal is operating within allowable parameters.
Yellow	<i>Minor</i>	<i>Minor/Warning</i>	Warning that an error of low importance has occurred.
Orange	<i>Major</i>	<i>Major</i>	Warning that an error of intermediate importance has occurred.
Red	<i>Critical</i>	<i>Critical</i>	Warning that an error of critical importance has occurred.
Gray	<i>Unknown</i>	<i>Indeterminate</i>	Failure to get the status of an alarm provider, even though the source device has been detected. This could happen, for example, as the result of (1) a lost network connection, or (2) a loss of signal that would trigger a critical alarm for signal presence but leave all other related alarms in an unknown status (e.g. the freeze or black status is unknown if a signal is not present).
Blue	<i>Non-existent</i>	—	A pseudo-status representing an alarm that has been removed (or was never added). If an alarm provider is removed—for example, if a card is removed from a frame—the virtual alarm will be unable to detect an alarm status, and will therefore report the “non-existent” status as blue.
Black	<i>Disabled</i>	<i>Not supported</i>	Alarm exists but has been disabled at the source. Some devices can have certain alarms disabled on the hardware itself, resulting in these alarms appearing black.

Reference Configuration

The *reference configuration* is a feature of iControl Solo that allows you to keep track of important cards, or groups of cards. If a card is removed from a slot, the default behavior in iControl Solo is for the card to disappear from the list in the Logical and Global views. In the

1. Default alarm severities in iControl Solo are compliant with the *intent* of ITU-T Recommendation X.733, *Information Technology – Open Systems Interconnection – Systems Management – Part 4: Alarm Reporting Function*

Network view, the device name is replaced by the slot number followed by the indication Empty.

When you designate a card as part of the reference configuration, then the name of the card and the slot number it occupies are retained. If the card is removed, its label will be visible as before, but with the description `Missing from slot` appended.

Device Profile Manager

Maintenance personnel and operators can perform quick and accurate, system-wide or focused, card and device configuration management by using **Device Profile Manager**.

Device Profile Manager allows you to:

- export profile data (configuration data about device groups) from one or several devices to a profile file
- import profile data from a profile file to one or several devices
- compare configured parameters, between two or more cards, of the same type and firmware version
- copy configuration data from:
 - one card to one card
 - one card to several cards
 - several cards to several cards
- perform a system snapshot by exporting all card configuration data (for cards supporting profile export)
- load a user-specified preset to one or several cards as the current configuration
- save the current configuration of one or several cards to any available user preset

See also

For more information, see [Working with Device Profile Manager](#) on page 37.

Loudness Logging and Analyzing

Certain devices like the Kaleido-Solo are capable of monitoring the loudness of audio streams. The data generated from monitoring may be sent to your client PC where iControl Solo's *Loudness Logger* can record and archive this stream of loudness data to a dedicated local folder.

After (or even during) the logging of loudness data, iControl Solo's *Loudness Analyzer* can plot a log file's loudness, making visible the data in units of LUFS (EBU) or LKFS (A85) over the time period covered by the file. **Loudness Analyzer** allows you to zoom into the data plot as well, effectively taking a subset of the time frame analyzed while increasing data granularity in the chart.

Additionally, with **Loudness Analyzer**, you may edit analysis parameters as well as showing or hiding certain data plots (e.g. choosing to show or hide the *DIALNORM* and *Short-term Momentary 1* data plots on the chart).

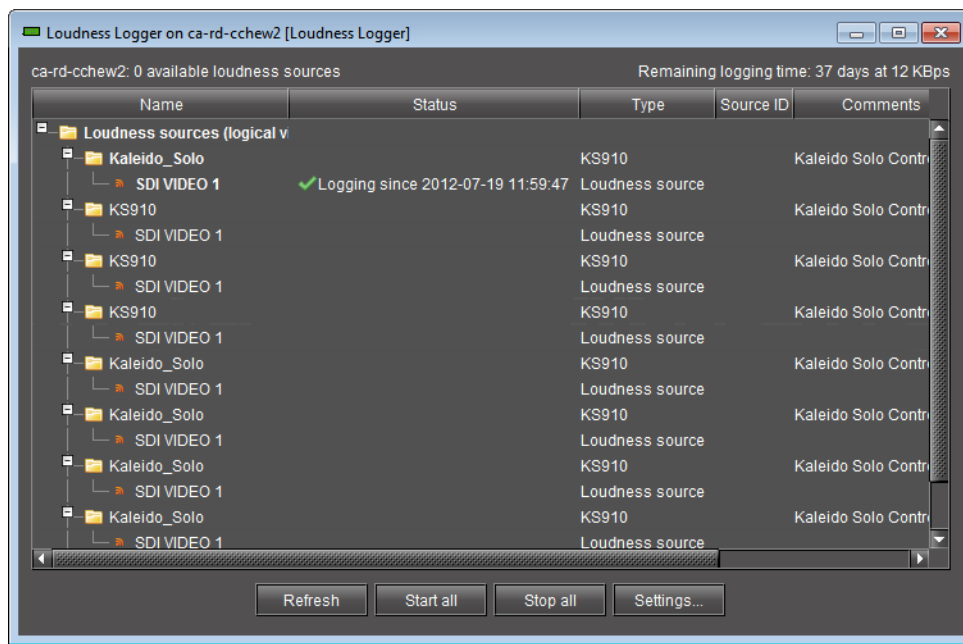
See also

For more information about:

- **Loudness Logger**, see [page 26](#).
- **Loudness Analyzer**, see [page 27](#).
- loudness logging and analyzing, see [Working with Loudness Logger and Loudness Analyzer](#), on page 50.
- **Loudness Logger** and **Loudness Analyzer**, refer to the Loudness Analyzer User Manual, available from the Documentation Library section of Grass Valley’s website.

Loudness Logger

Loudness Logger allows you to start and stop the logging of loudness data streams coming from external audio sources, such as Kaleido-Solo. When you initiate logging of a loudness data stream, you are streaming the data to a log file on your client PC.



Loudness Logger

UI Element	Description
Main window	Displays available loudness data streams
Refresh	Refreshes the main window
Start all	Starts logging all available loudness data streams
Stop all	Stops logging all available loudness data streams
Settings	Allows you to specify the location on your local file system where you would like to save loudness data

IMPORTANT: Make sure you have sufficient storage space for loudness data

When specifying a location for storing loudness data, make sure you have enough storage space available. If, when logging loudness data, the logger runs out of space, it will stop logging.

Grass Valley recommends using a controlled remote storage device to ensure adequate storage space.

Refer to the table below, for guidelines on estimating storage space requirements.

Differential bit rate of loudness raw data from various devices

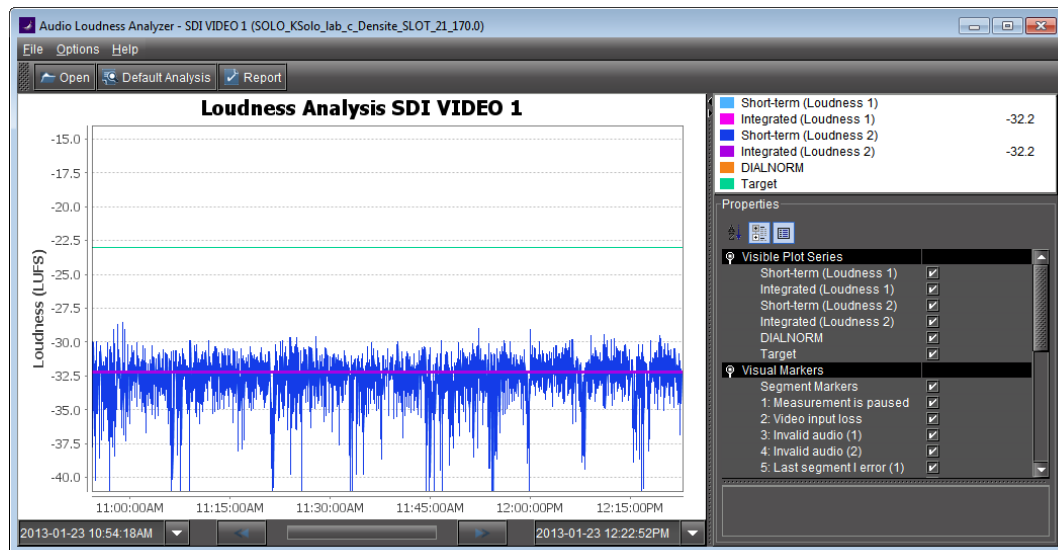
Device	Number of audio programs	Bitrate (Bytes/second)	Bitrate (MBytes/day)
KS-910	1-2	170-210	14.7-18.2
XVP-3901	1-8	170-450	14.7-39
EAP-3901	1-8	170-450	14.7-39
AMX-3981	1-8	170-450	14.7-39
ADX-3981	1-8	170-450	14.7-39

See also

For more information about:

- Working with **Loudness Logger** and **Loudness Analyzer**, see [page 50](#).
- **Loudness Analyzer**, see [page 27](#).

Loudness Analyzer



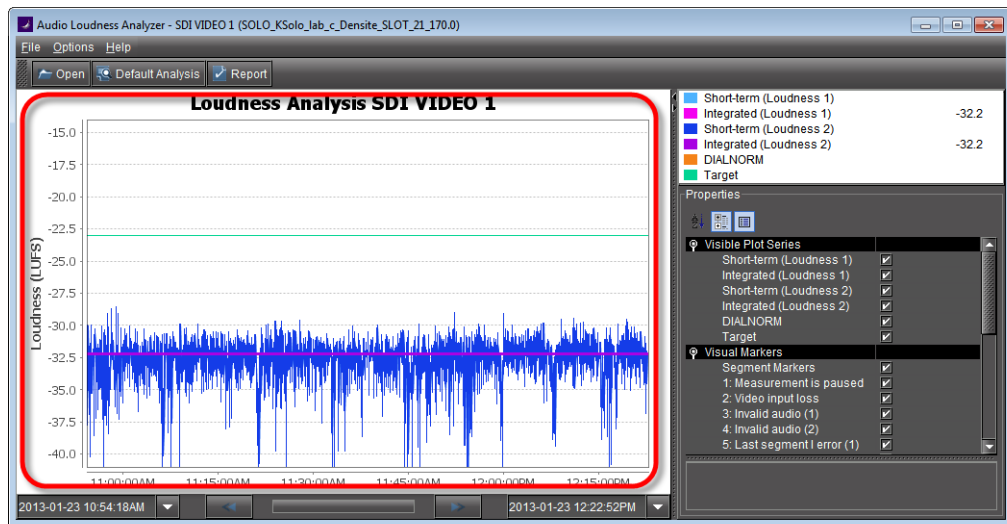
Loudness Analyzer is a powerful tool for graphically depicting an audio source's loudness data over a period of time. The power of this tool lies primarily in its configurability of analysis parameters, including the applicable loudness standard, relative gating, and short-term window. As well, **Loudness Analyzer** allows you to *zoom into* a data plot. Each zooming action triggers a new analysis of loudness data from source, for the requested time period (configurable start and stop times) and given the configured analysis parameters.

Additionally, one can choose to incrementally display or hide plot series. For example, you may decide to display only *Short-term Momentary 1*, *Integrated Momentary 1*, and *DIALNORM* data while hiding the remaining series in order to unencumber the visual chart.

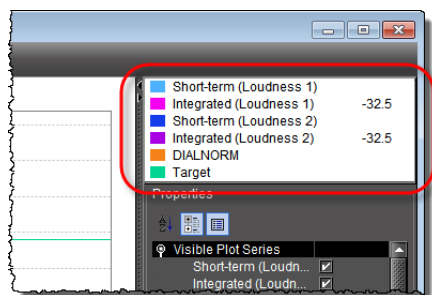
See also

For more information about:

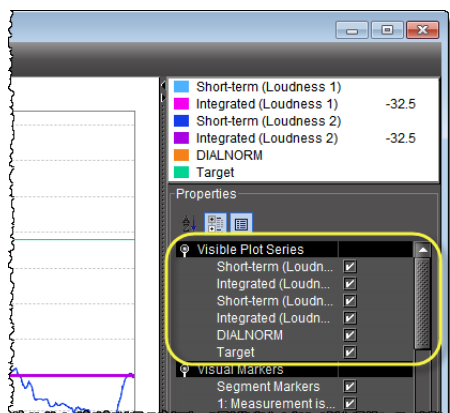
- **Loudness Analyzer**, refer to the Loudness Analyzer User Manual, available from the Documentation Library section of Grass Valley's website.
- **Loudness Logger**, see [page 26](#).
- Working with **Loudness Analyzer** and **Loudness Logger**, see [page 50](#).



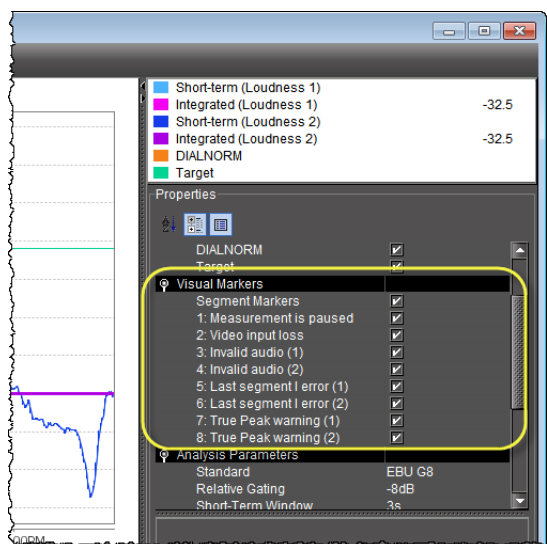
Data plot chart (circled in red)



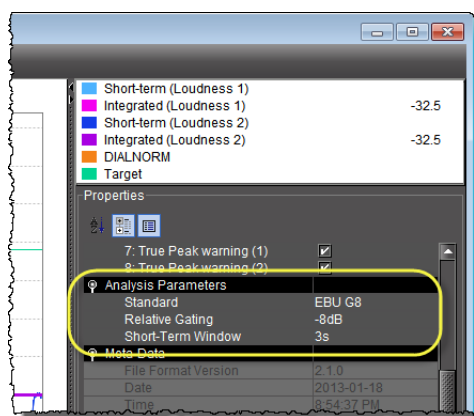
Visible plot series: Color-coded legend and values



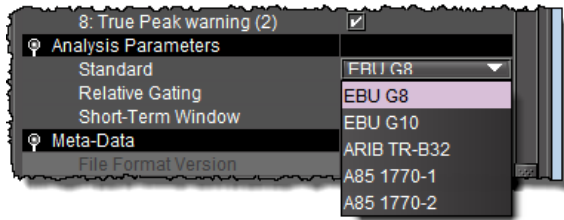
Visible plot series: Display options



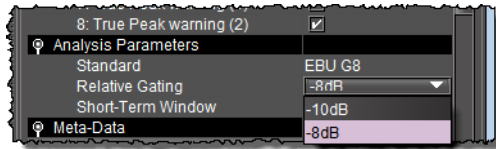
Visual Markers: Display options



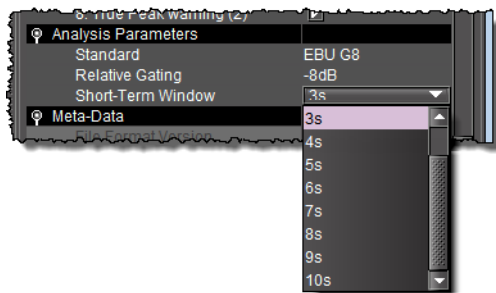
Properties: Analysis parameters



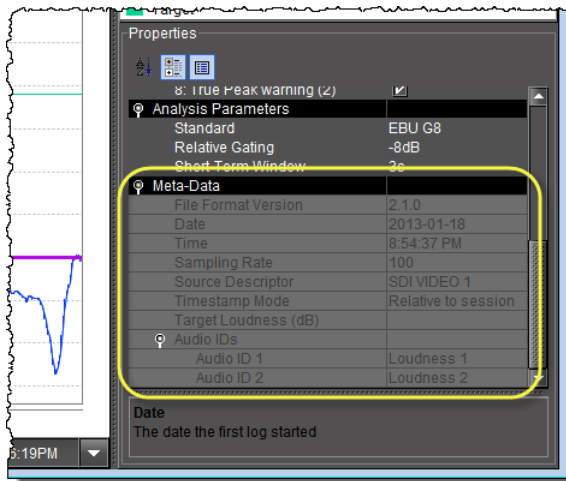
Properties: Analysis parameters (available standards)



Properties: Analysis parameters (relative gating)



Properties: Analysis parameters (short-term window)



Meta-data (not editable)

Densité Upgrade Manager

Densité Upgrade Manager is an iControl Solo utility allowing you to manage the firmware and software versions of individual cards without having to put entire Densité frames into operational *Standby* mode. **Densité Upgrade Manager** allows you to effectively toggle

among Densité card firmware versions. From time to time, new versions become available, and **Densité Upgrade Manager** allows you to upload these.

IMPORTANT: System behavior

The **Densité Upgrade Manager** included with any version of iControl Solo (starting with version 6.00), supports all Densité card types, **including** cards that do not yet exist.

For example, if a brand new Densité card, *ABC-1234*, is installed in a Densité frame visible to a version of iControl Solo that is, at the time, three years-old (but still version 6.00 or greater), the *ABC-1234* card would be visible within **Densité Upgrade Manager**.

Firmware and software is bundled into single upgrade packages. That is, a package contains one version of firmware for a given Densité card and one version of software. By upgrading a card with a given package, you are changing both the installed firmware and software to those versions of each within the upgrade package.

IMPORTANT: The version numbering of packages represents a system of incrementation belonging **ONLY** to the package and not to the respective version numbering of firmware and software.

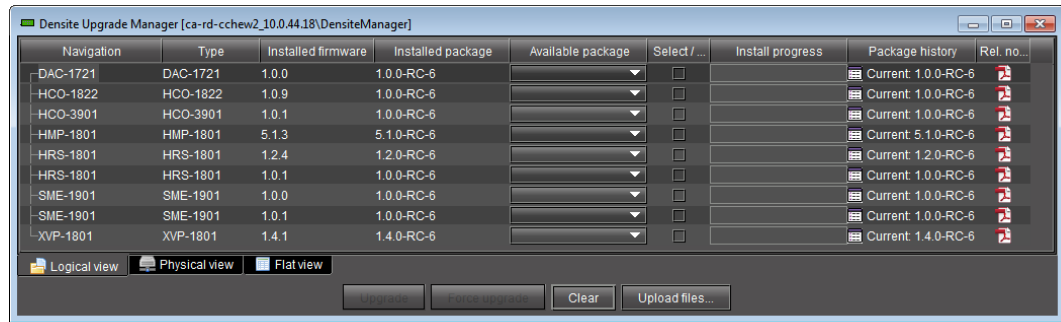
Note: **Densité Upgrade Manager** does not allow you to upgrade, downgrade, or roll back firmware separately from software. Changing an installed package necessarily implies changing the component firmware **AND** software to those versions of each embedded within the introduced package.

See also

For more information about:

- Upgrading, downgrading, and rolling back firmware and software of Densité cards, see [Working with Densité Upgrade Manager](#), on page 67.
- The **Densité Upgrade Manager** user interface including icon colors and their meanings, see [User Interface of Densité Upgrade Manager](#), on page 32.

User Interface of Densité Upgrade Manager



Densité Upgrade Manager

Densité Upgrade Manager UI descriptions

Item	Description
--- Columns ---	
Navigation	The tree structure in this column graphically situates Densité cards, and their modules if applicable, in the context of several different navigation method, as follows: <ul style="list-style-type: none"> • Logical view: a logical arrangement (sorted by type) • Physical view: a hierarchy representing the nested physical componentry (e.g. appserver > Densité frame > slot > card) • Flat view: a flat listing of the Densité cards in alphabetical order.
Type	Type of Densité card
Installed firmware	Installed firmware version and firmware upgrade path. If no package is selected under Available package , only the installed firmware version appears in this column. If a package is selected, the upgrade (or downgrade) path appears. If you would like to determine if firmware will be installed in the installation of the selected package, an upgrade path showing X —> X in this column indicates there will be no new installation of firmware. By contrast, an upgrade path showing X —> Y indicates firmware will be installed.
Installed package	Installed package version and package upgrade path.
Available package	Selectable list of packages (relevant to a given Densité card) available to be installed. The version numbers listed are package numbers and not firmware numbers.
Select / Bypass	Selection tool indicating which cards will have their respectively selected available packages installed once the Upgrade or Force upgrade button is pressed. Additionally, if a package is selected for a card and you would like for it to remain selected but not installed in the next upgrade, you may clear the Select / Bypass check box to make this happen.
Install progress	The progress bar measuring the current installation of a package. After an installation, this field displays a status message of the last installation attempt.
Package history	Logs of all package installations for each Densité card.
Rel. notes	Link to the release notes for the version of firmware embedded within the installed package.

Densité Upgrade Manager UI descriptions (*Continued*)

Item	Description
--- Buttons ---	
Upgrade	Click to begin installing the selected packages (whether upgrade, downgrade, or rollback) to their respective cards.
Force upgrade	Click to begin installing the selected packages to their respective cards (same behavior as the Upgrade button). However, in all cases where the firmware embedded within selected packages have the same version numbers as the installed firmware, no firmware will be installed from the selected package (in theory because it is the same version). In order to override the Upgrade button's behavior of NOT installing a save-version firmware from a selected package, you must click Force upgrade .
Clear	Click to clear all selections from the Available package column and all messages from the Select / Bypass column.
Upload files	Click to upload an upgrade package file.

GV Node Manager

GV Node Manager provides a visual control panel to help you manage a GV Node frame, and the modules it contains.

For **GV Node Manager** to discover the cards housed in a GV Node frame, you must configure a Communicator service for the frame (see [Communicators](#), on page 3). Each frame typically includes at least the following modules:

- the frame controller, which is represented by *two* control panels in iControl Solo: *Frame Controller*, and *Frame Reference*;
- the *IFM-2T* internal fabric module;
- and a number of Densité cards (e.g., XIO-4901, KMX-4911).

The GV Node Manager control panel lists every Densité card in the GV Node frame's slots, and their rear panel model (if present). For a compatible card, you can select signal-type options, and select which inputs and outputs are enabled, *between the card and the Internal Fabric Module*, to match the card's actual physical configuration.

For example, the XIO-4901 3G/HD/SD SDI input/output card supports audio embedding/de-embedding, as a software option (MDX). If this option has been activated (refer to the XIO-4901 manual, for more information), then GV Node Manager allows you to enable or disable audio embedding/de-embedding on a card's SDI inputs and outputs. If your system is monitoring MADI signals (supported at the card's inputs/outputs 8 and 9), then disabling the MDX option lets you select MADI at the inputs and outputs matching your physical configuration. The total numbers of enabled inputs (to the Fabric module), and output (from the Fabric module) are indicated at the bottom of the control panel. These totals exclude MADI inputs and outputs.

GV Node Manager/VMS_CentOS-6_42_1/GV-Node [GV Node Manager]																																			
#	Card	Rear panel	Options	Inputs to Internal Fabric Module									Outputs from Internal Fabric Module																						
				1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9														
1	XIO-4901	XIO-4901-4SRP-D		SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI																	
2	XIO-4901	XIO-4901-4SRP-D		SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	MADI	SDI	SDI	SDI	SDI	SDI	SDI																	
3	XIO-4901	XIO-4901-4SRP-D	MDX	MDX	MDX	MDX	MDX	SDI	SDI	SDI	SDI	MDX	MDX	MDX	MDX	MDX	SDI	SDI																	
4	XIO-4901	XIO-4901-4SRP-D		SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI																	
5	XIO-4901	XIO-4901-4SRP-D		SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI																	
6	XIO-4901	XIO-4901-4SRP-D		SDI	Off	SDI	Off	SDI	Off	SDI	Off	SDI	Off	SDI	Off	SDI	Off	SDI																	
7	XIO-4901	XIO-4901-4SRP-D	None	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI																	
8	XIO-4901	NO REAR		SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI																	
9		Empty																																	
10		Empty																																	
11		Empty																																	
12		Empty																																	
13		Empty																																	
14		Empty																																	
15		Empty																																	
16		Empty																																	
IFM-2T				IFM-2T-RP				Total Inputs to Internal Fabric Module:									67					Total Outputs from Internal Fabric Module:									62				

See also

For more information, see [Adding GV Node Services](#) on page 9, and [Opening GV Node Manager](#) on page 78.

Detailed Directions

Opening iControl Solo

To open iControl Solo

- Use the iControl Solo shortcut on your desktop.
iControl Solo appears.

Closing iControl Solo

To close iControl Solo

- Do **one** of the following:
 - Close all iControl Solo windows,
 - OR,**
 - On iControl Solo’s **File** menu, click **Quit**.
 All changes are automatically saved.

Opening Control Panels

To open the control panel for a device

- In iControl Solo, right-click the device, and then click **Show control panel** on the shortcut menu. Alternatively, double-click the device.
The device’s control panel appears.

Opening Info Control Panels

To access the Info control panel for a device

1. In iControl Solo, double-click the device.
The device control panel appears.
2. Do **one** of the following:
 - Select the **Info** tab,
 - OR,**
 - In iControl Solo, right-click the device, and then click **Show info control panel** on the shortcut menu.

Changing Device Information

Some device information can be customized from the device's Info control panel. Changes made in the control panel are immediately applied to the device.

- The device name appears in the **Label** box.
- You can modify the source ID and add comments in the corresponding boxes.

Renaming Devices

To rename a device

1. Open the **Info** window for the device you wish to rename (see [Opening Info Control Panels](#), on page 35).
2. Type the new name in the **Label** box.
The changes are immediately applied.

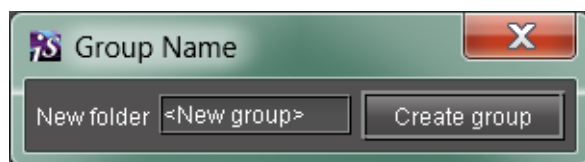
Managing Device Groups

With iControl Solo, you can create as many device groups as necessary for your system, and then place the various devices into the appropriate groups. A device can only be a member of one group.

Creating Groups

To create a group

1. In iControl Solo, click **Logical view**.
2. Right-click the location for the new group (the root folder, or another folder within the hierarchical structure) and then click **Add Group** on the shortcut menu.
The **Group name** window appears.



3. Type a name for the group (e.g. "satellite" or "remote"), and then click **Create Group**.
The group appears as a new folder in the chosen location.

Moving Groups

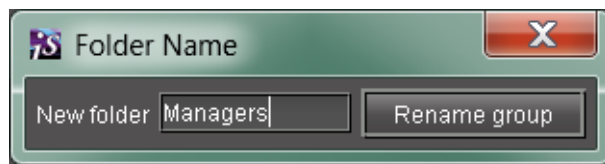
To move a group

1. In iControl Solo, right-click the group you wish to move, and then click **Cut** on the shortcut menu.
2. Right-click the destination folder, and then click **Paste** on the shortcut menu.
The group appears as a new folder in the chosen location.

Renaming Groups

To rename a group

1. In iControl Solo, select the group folder you wish to rename.
2. Right-click the group folder and then click **Rename group**.
The **Folder Name** window appears.



3. Type a new name for the group, and then click **Rename group**.
The new group name appears for the chosen folder.

Removing Groups

To remove a group

1. In iControl Solo, expand the group folder you wish to remove.
2. Remove all devices from the group folder by dragging them to another folder or to the root of the folder structure (only empty groups can be removed).
3. Right-click the empty group folder, and then click **Remove group** on the shortcut menu.
4. When prompted to confirm the removal, click **Yes**.
The group no longer appears in iControl Solo.

Adding Cards to the Reference Configuration

The reference configuration (see [page 24](#)) is a way to keep track of cards or groups of cards important to your setup.

To add a card to the reference configuration

- In iControl Solo, right-click the card you wish to add, and then click **Add to reference configuration** on the shortcut menu.
The phrase **In Ref. Configuration** appears in the **Config status** column.

Note: If this card is physically removed from its slot, the card name remains in the **Label** column, along with the phrase **Missing from slot**.

Removing Cards from the Reference Configuration

To remove a card from a reference configuration

- In iControl Solo, right-click the card you wish to remove, and then click **Remove from reference configuration**.

The phrase **Not In Ref. Configuration** appears in the **Config Status** column.

Working with Device Profile Manager

Opening Device Profile Manager

To open the Device Profile Manager

1. In iControl Solo, select the devices whose profiles you would like to compare, export from or import to.

2. On the **Tools** menu, click **Device Profile Manager**,
OR,

Right-click one of the selected device rows, and then click **Device Profile Manager**.

The **Device Profile Manager** window appears, displaying (by default) the **Export** tab in the **Logical view** of the selected devices.

Note: You can select **Show all devices** to display all discovered devices.

3. Near the top of the window, click the **Export** tab, **Import** tab, **Presets** tab, or **Compare** tab, as required.
4. Near the bottom of the window, click the **Logical view** tab, **Physical view** tab, or **Flat view** tab as required.

Notes

- If you are in the **Import** tab, you must select a view for both **Source devices** and **Target devices**.
 - If you are in the **Compare** tab, you must select a view for both **Master card selection** and **Compare cards selection**.
 - The **Logical view**, **Physical view**, and **Flat view** tabs behave in the same way in **Device Profile Manager** as in iControl Solo. For more information about these tabs, see [Views](#), on page 23.
-

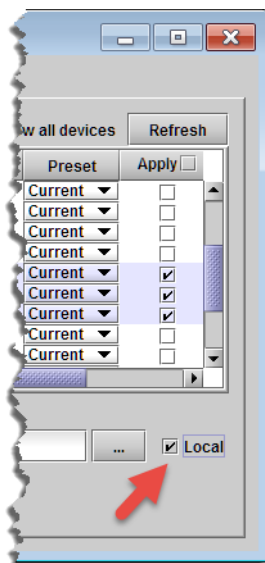
Exporting Selected Device Profiles to a Profile File

REQUIREMENT

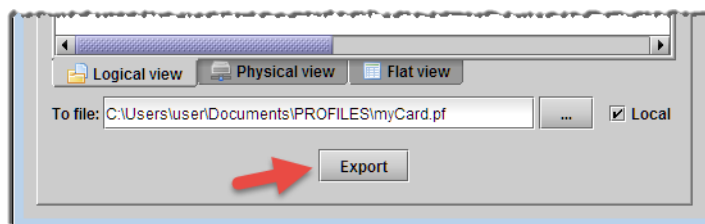
Before beginning this procedure, make sure you have opened **Device Profile Manager** (see [page 37](#)).

To export selected device profiles to a profile file

1. In **Device Profile Manager**, click the **Export** tab.
2. In the **Apply** column, select the devices whose profiles you wish to export to a file on your local PC, by selecting the corresponding check boxes, in the **Apply** column.
3. Select **Local**.



4. Click the Browse button () next to the **Local** check box.
The **Open** window appears.
5. In the **Look In** menu, browse for the directory you would like to export to (see [Navigating with the File Browser in the Open Window](#), on page 48).
6. In the **File Name** box, type the name of the profile file you wish to create.
7. Click **Select**.
The **Open** window closes.
8. In **Device Profile Manager**, click **Export**.




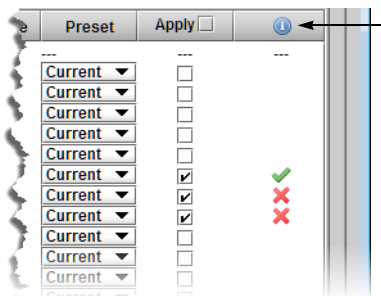
A progress window displays the export progress.

Note: To cancel the operation before this process is complete, click **Cancel**.

When the process is complete, the **Export** confirmation window appears.

- Click **OK** to close the **Export** confirmation window.

In **Device Profile Manager**, in the Result column (the column with the information icon  in the header), either a check mark or an 'X' is displayed for the selected devices.



Note: A check mark indicates that the last operation for this device succeeded. An 'X' indicates that the last operation for this device failed.

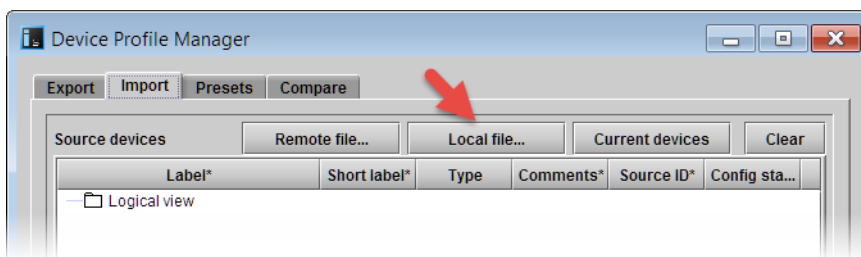
Importing Profile Data from a File to Selected Devices

REQUIREMENT

Before beginning this procedure, make sure you have opened **Device Profile Manager** (see [page 37](#)).

To import profile data from a file to selected devices

- In **Device Profile Manager**, switch to the **Import** tab.
The **Import** tab shows discovered or preset **Source devices** and **Target devices**.
- Click **Local file**.

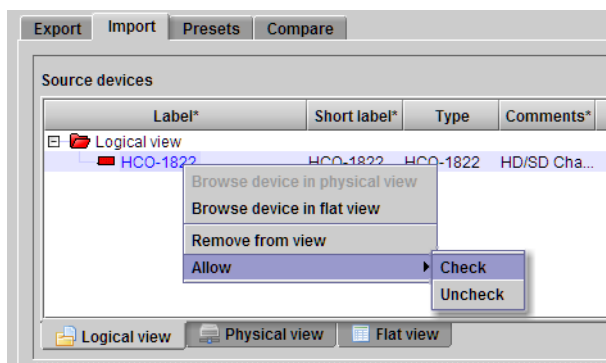


The **Open** window appears.

- Navigate to the profile file from which you would like to import (see [Navigating with the File Browser in the Open Window](#), on page 48).
- Click **Select**.

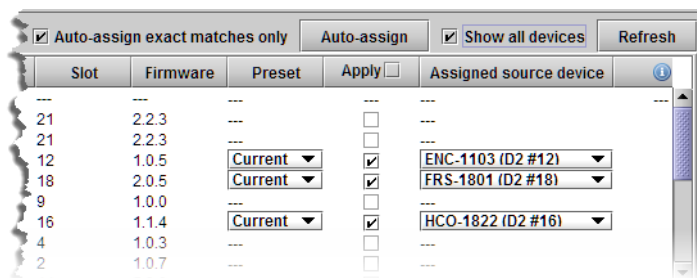
The **Open** window closes, and card profiles from the selected file are added to the **Source devices** list in **Device Profile Manager**.

5. In the **Source devices** pane, select the check box in the **Allow** column for every source device whose profile you wish to import,
OR,
Select the source devices whose profile you wish to import, right-click the selection, point to **Allow**, and then click **Check**.



6. In the **Target devices** pane, if the desired target devices are not listed in the list of preset devices, click **Show all devices**.

The **Target devices** list refreshes with a complete list of discovered devices.



Note: By default, the **Auto-assign exact matches only** check box is selected. For those targets with exact matches to any listed source devices, assigned sources appear in the **Assigned source device** column.

7. In the **Target devices** pane, perform the following steps:
 - a) Select all devices to which you would like to download imported profile data.
 - b) If you would like to perform exact matching of sources to targets, select **Auto-assign exact matches only**, otherwise the system performs lenient matching.

Note: *Exact matching* allows you to quickly finish the task when you only need to import onto identical devices. *Lenient matching* is for advanced users who would like to import onto non-identical but compatible devices.


- c) Select the check boxes in the **Apply** column for all devices to which you would like to attempt to import profile data.

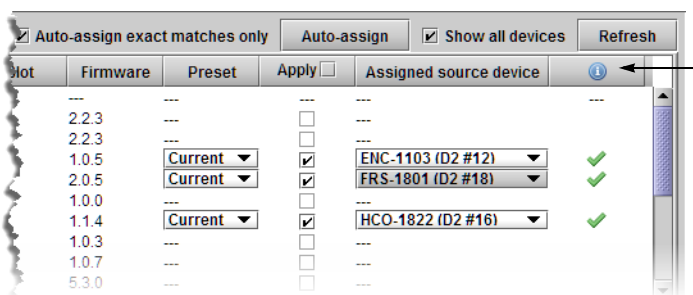
Note: If you want to import profiles for all listed devices, select the **Apply** check box in the header row.

- d) Click **Auto-assign** to discover matches between the listed source and target devices. For each selected target with at least one matching source, possible source devices are listed in the **Assigned source device** column.
- e) In the **Assigned source device** column, select the desired source device match for each selected target.
- f) Click **Import**.
A progress window displays the import progress.

Note: To cancel the operation before this process is complete, click **Cancel**.

When the process is complete, the **Import** confirmation window appears.

- g) Click **OK** to close the **Import** confirmation window.
In the Result column (the column with the information icon  in the header) of the **Target devices** pane, either a check mark or an 'X' is displayed for selected devices.



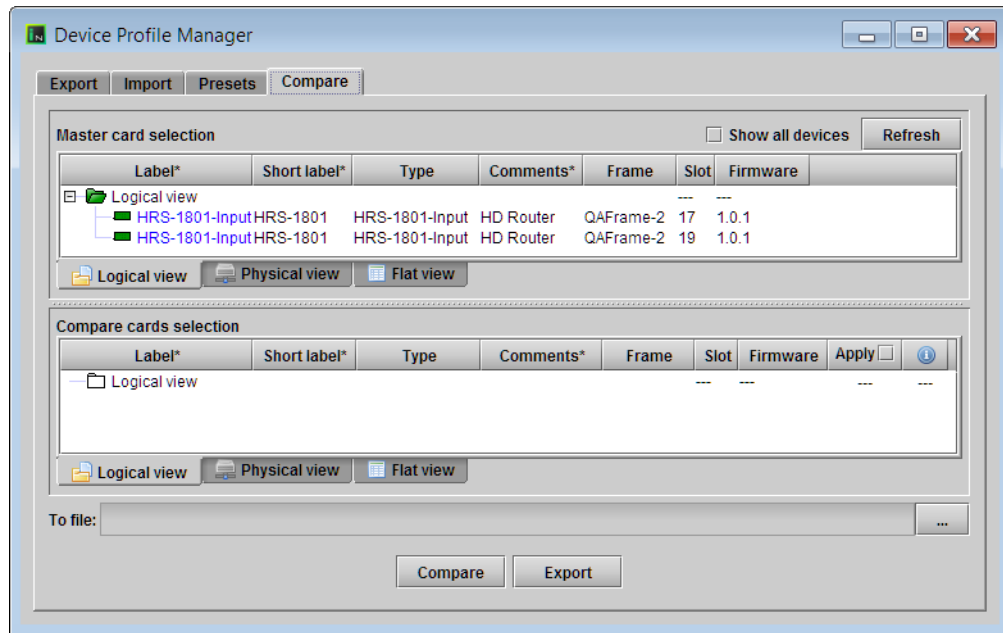
Note: A check mark indicates that the last operation for this device succeeded. An 'X' indicates that the last operation for this device failed.

Comparing Configured Parameters Between Selected Devices

To compare configured parameters between selected cards

1. In iControl Solo, select the cards whose configured parameters you wish to compare.
2. Right-click the selection, and then click **Compare**.

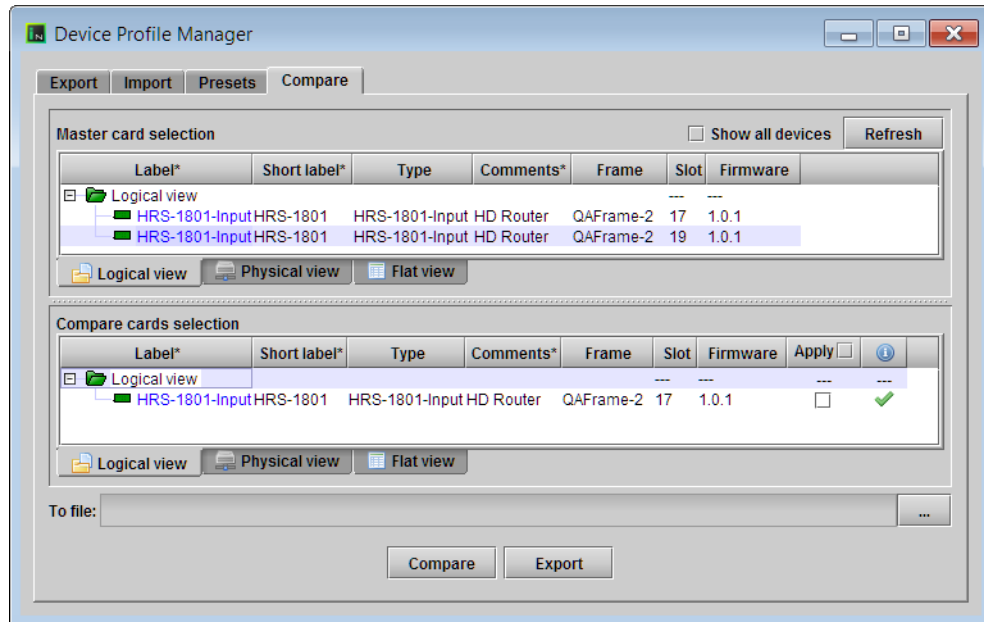
Device Profile Manager appears, with the **Compare** tab in focus. Both panes are in **Logical view** mode. The selected cards appear in the **Master card selection** pane.



Note: You can select **Show all devices** to display all discovered devices.

3. In the **Master card selection** pane, click the card you wish to use as the reference device for the comparison.

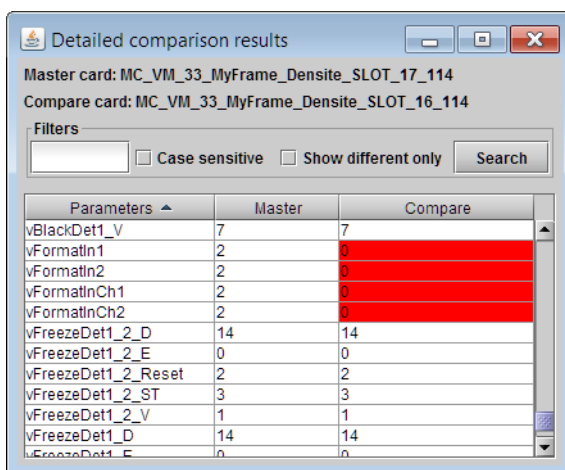
Cards of the same type and firmware version appear in the **Compare card selection** pane.



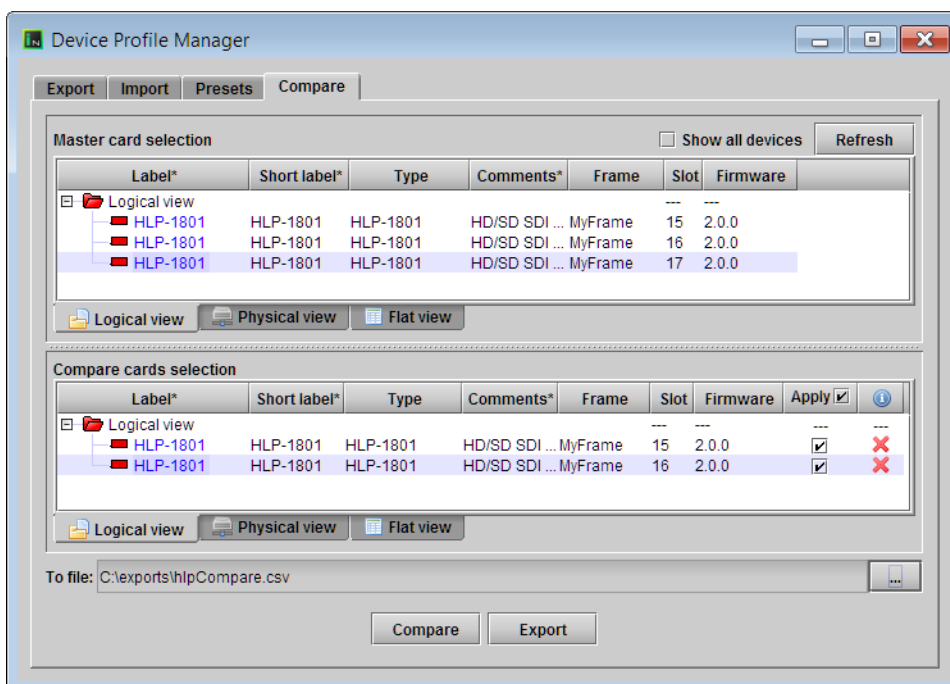
A green check mark in the Information column for a card indicates that this card and the master card have the same settings. A red cross indicates that there are differences between the cards' configured parameters.

- **To review a card's configured parameters, against the master card's:** In the **Compare cards selection** pane, click the card you wish to compare against the master, and then click the **Compare** button.

The **Detailed comparison results** window appears, with differences highlighted in red. You can filter the comparison results by typing text in the **Filters** box, selecting **Case sensitive**, or **Show different only**, and then clicking **Search**.



- **To export card configuration details to a CSV file:** In the **Apply** column, select the cards whose parameters you wish to export by clicking the corresponding check boxes, click the **Browse** button to specify the CSV file name and location, and then click **Export**.



The exported CSV file lists all configured parameters, with one column for the master card, and a column for each of the cards you selected for export.

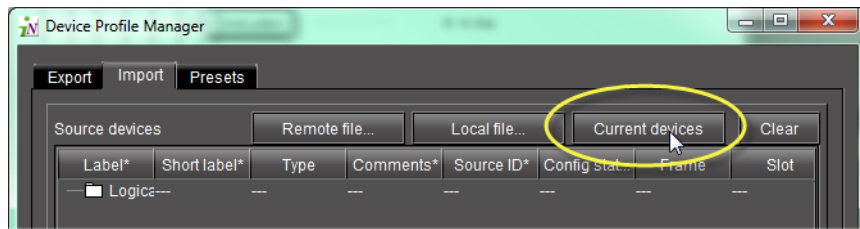
Copying Profile Data from Selected Devices to Other Selected Devices

REQUIREMENT

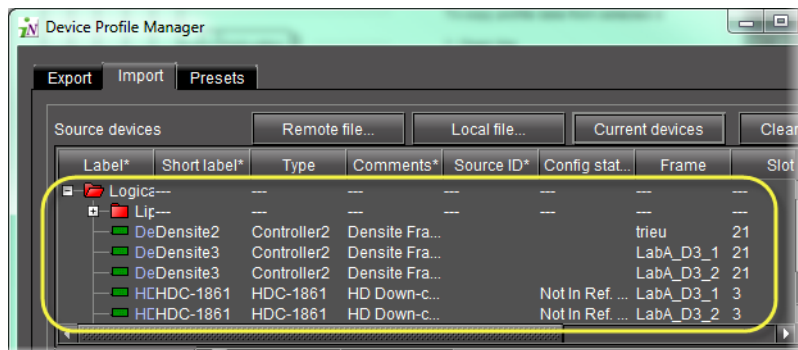
Before beginning this procedure, make sure you have opened **Device Profile Manager** (see [page 37](#)).

To copy profile data from selected devices to other selected devices

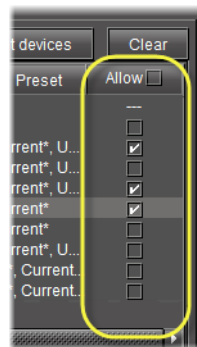
1. In **Device Profile Manager**, click the **Import** tab.
2. In the **Source devices** pane, perform the following steps:
 - a) Click **Current devices**.



The **Source devices** pane is populated with all discovered current devices.

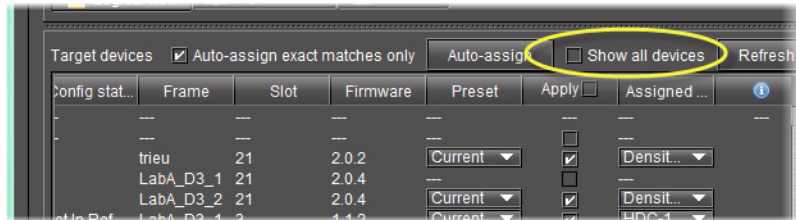


- b) In the **Allow** column, select all devices whose configuration data you would like to copy from.



3. In the **Target devices** pane, perform the following steps:

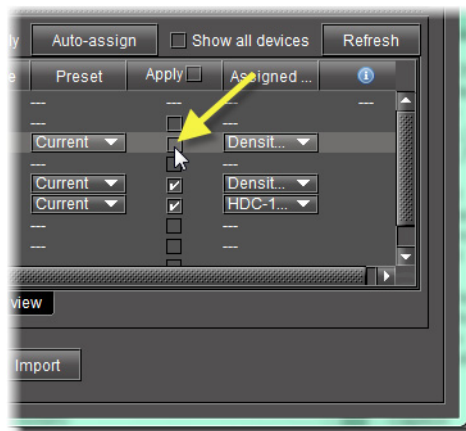
- a) Select **Show all devices** to display all discovered devices.



The **Target devices** pane is populated with all discovered devices.

Note: The target devices all display auto-assigned matches (the check box in the **Apply** column is selected for every matched device).

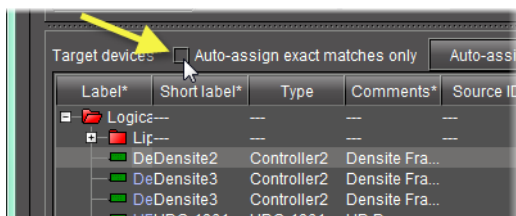
- b) For every target device you do not want to copy configuration data to, clear the **Apply** check box.



- c) For every target device you would like to copy configuration data to, make sure the assigned source device is the appropriate choice. If it is not, select a more appropriate source device from the list in the **Assigned source device** column.

4. In the **Assigned source device** column, if you do not find the source device you would like to assign, perform the following steps:

- a) Clear the **Auto-assign exact matches only** check box.




- b) Click **Auto-assign**.

The lists of possible source device matches, in the **Assigned source device** column, are expanded to include non-exact matches.

- c) Select the appropriate source device match from the expanded lists.

5. Click **Import**.

The configuration data from the selected source devices is copied to the selected target devices.

In the Result column (the column with the information icon  in the header) of the **Target devices** pane, either a check mark or an 'X' is displayed for selected devices.

Note: A check mark indicates that the last operation for this device succeeded.
An 'X' indicates that the last operation for this device failed.

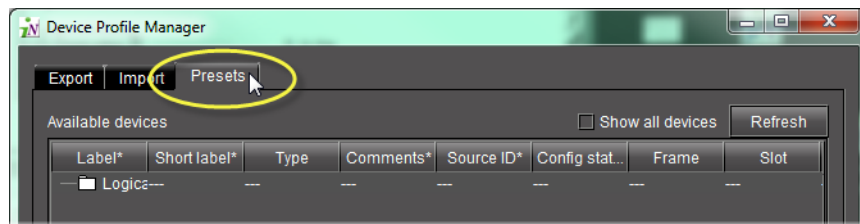
Loading a Device's Preset Configuration Data as its Current Configuration

REQUIREMENT

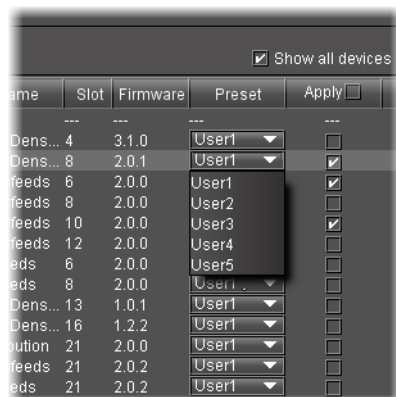
Before beginning this procedure, make sure you have opened **Device Profile Manager** (see [page 37](#)).

To load a device's preset configuration data as its current configuration

1. In **Device Profile Manager**, click the **Presets** tab.
The **Presets** tab displays discovered or preset devices.

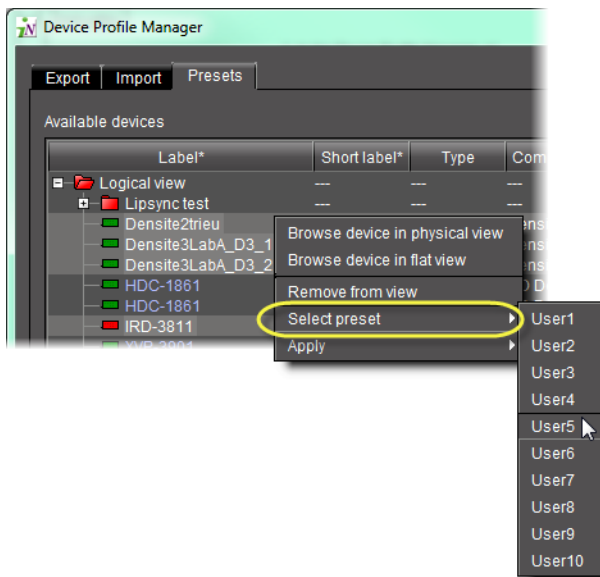


2. Click **Show all devices** to populate the list.
3. In the **Available devices** area, select those devices with presets you would like to set as the active configuration.
4. If you would like to assign presets individually for each of the selected devices, select the preset you would like to load as the active configuration.

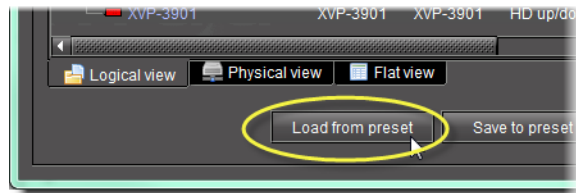


Note: When a preset is selected in the **Preset** column, the corresponding **Apply** check box is automatically selected.

5. If you would like to assign one preset to multiple devices, perform the following steps:
 - a) Select those devices for which you would like to assign a preset as the active configuration.
 - b) Right-click on any one of the selected devices, point to **Select preset**, and then click the desired preset from the list.



6. Click **Load from preset**.



A confirmation window appears.

7. Click **OK** in the confirmation window.

Saving a Device's Current Configuration Data as One of its Presets

REQUIREMENT

Before beginning this procedure, make sure you have opened **Device Profile Manager** (see [page 37](#)).

To save a device's current configuration data as one of its presets

1. In **Device Profile Manager**, click the **Presets** tab near to the top.
The **Presets** tab displays listings of discovered or preset devices.
2. For each of the selected devices, perform the following steps:
 - a) In the **Preset** column, select the preset to which you would like to save configuration data.
 - b) In the **Apply** column, for each device with active configuration data you would like to save to a preset, select the check box.
3. Click **Save to preset**.
A confirmation window appears.
4. Click **OK** in the confirmation window.

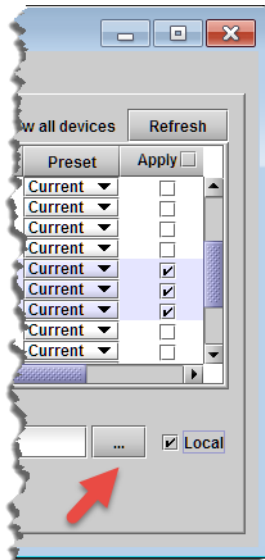
Navigating with the File Browser in the Open Window

REQUIREMENT

Before beginning this procedure, make sure you have opened **Device Profile Manager** (see [page 37](#)).

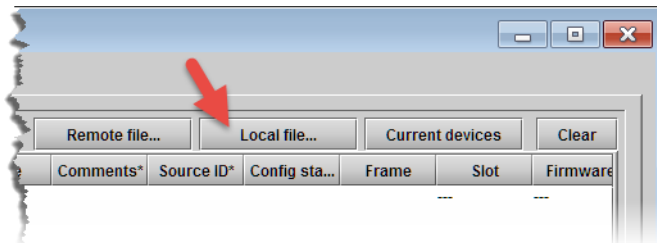
To navigate with the file browser in the Open Window

1. In **Device Profile Manager**, perform only **ONE** of the following steps, depending on your requirements:
 - If you are exporting, on the **Export** tab, select the **Local** check box, and then click the Browse button () near the bottom, right side of the window.

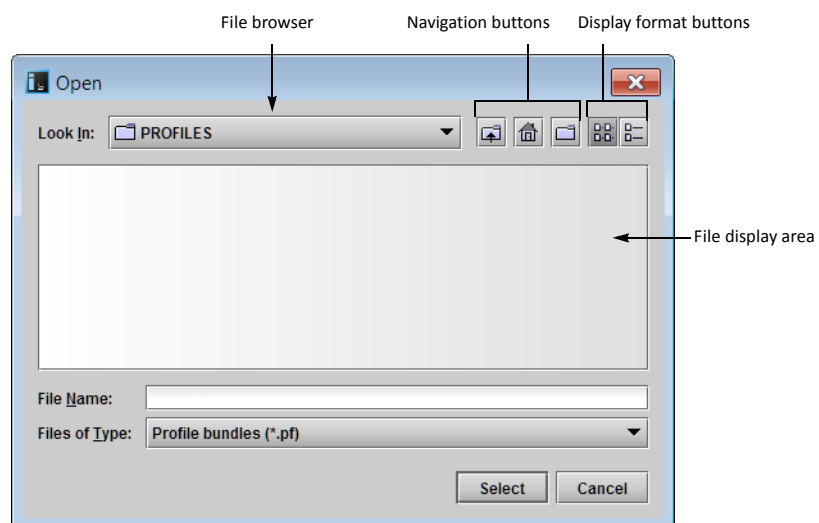


OR,

- If you are importing, on the **Import** tab, click **Local file**.



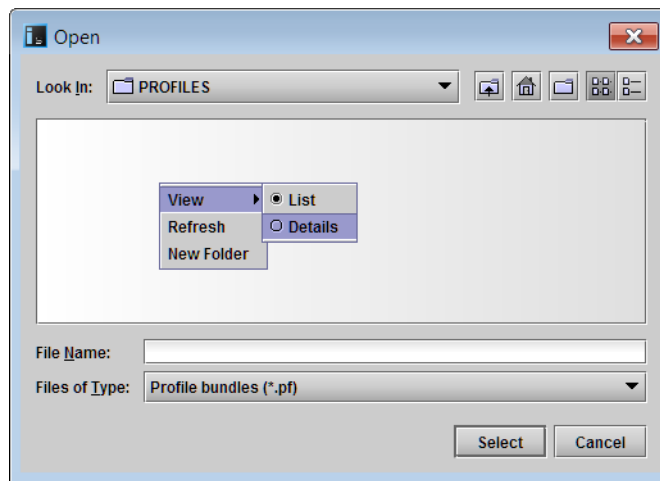
The **Open** window appears.



2. In the **Open** window, browse to the local directory where the desired profile file is located or where you wish to create a profile file.

Note: Use the Navigation buttons to help you browse.

3. To change the view format of the displayed files, use the **Display format** buttons, or perform the following steps:
 - a) Right-click anywhere in the file display area.
 - b) Point to **View**, and then click either **List** or **Display**, as required.



The view format changes to the selected mode.

Working with Loudness Logger and Loudness Analyzer

There are several tasks you can perform related to both logging and analyzing loudness data in iControl Solo. Certainly, before you do anything else, you must make sure your system is properly configured. You must also make sure you log before you analyze. While the sequence of these tasks may seem obvious, the sequence of other required tasks may not be. The following is an approved workflow for configuring, logging, and analyzing loudness data in iControl Solo.

Sample workflow: Logging and analyzing loudness

1.	Open Loudness Logger (see page 51).
2.	Specify a location in your local file system where you would like loudness data to be saved (see page 53).
3.	Log loudness data for the desired audio stream (see Logging an Audio Stream's Loudness Data , on page 55).
4.	Stop the loudness log recording (see page 56).
5.	Open Loudness Analyzer (see page 52).
6.	Configure general Loudness Analyzer settings (see page 56).

Sample workflow: Logging and analyzing loudness (*Continued*)

7.	Open a loudness log file (see page 60).
8.	[OPTIONAL] Zoom into Loudness Analyzer's data plot (see page 63).
9.	[OPTIONAL] Configure loudness analysis parameters for this data plot (see page 61).
10.	[OPTIONAL] Generate a loudness analysis report (see page 65).

See also

For more information about:

- Logging and analyzing loudness data, see [page 25](#).
- **Loudness Logger**, see [page 26](#).
- **Loudness Analyzer**, see [page 27](#).
- **Loudness Logger** and **Loudness Analyzer**, refer to the Loudness Analyzer User Manual, available from the Documentation Library section of Grass Valley's website.

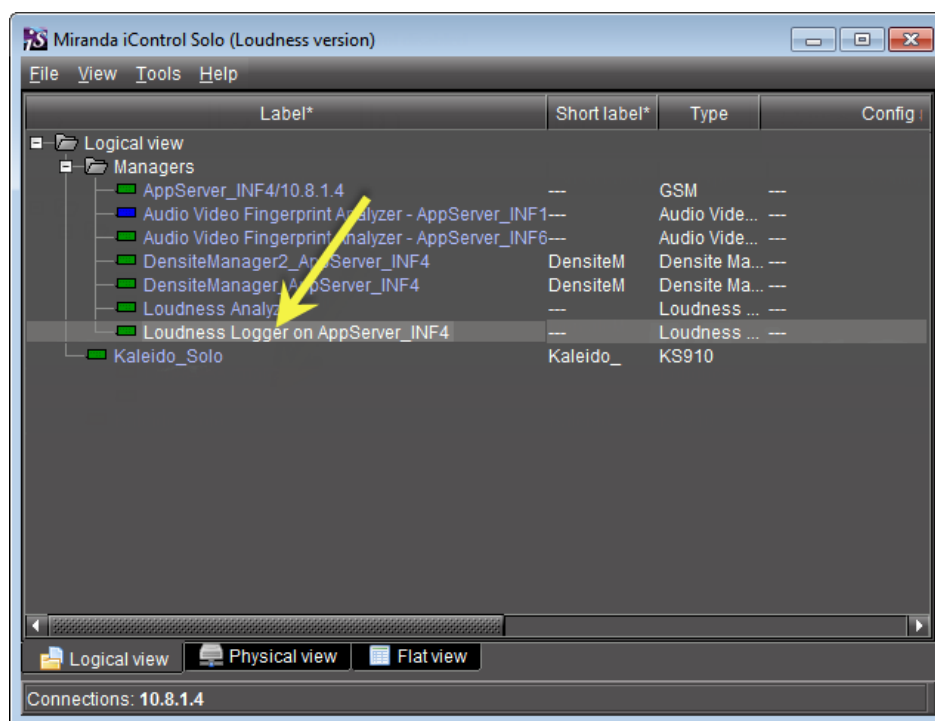
Opening Loudness Logger

REQUIREMENT

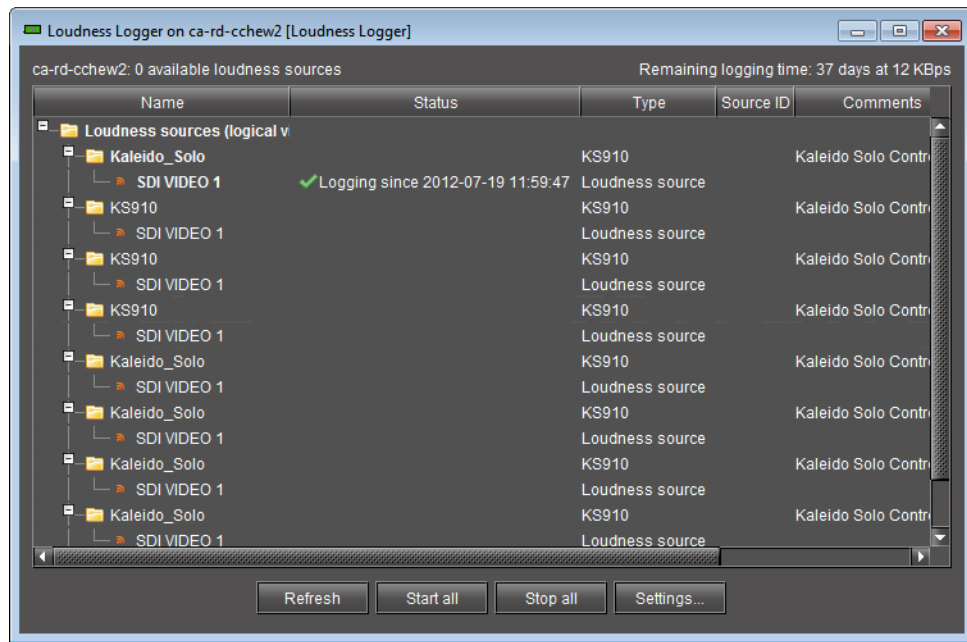
Before beginning this procedure, make sure you have opened iControl Solo (see [page 34](#)).

To open Loudness Logger

- In iControl Solo, double-click the desired **Loudness Logger**.



Loudness Logger appears.



Opening Loudness Analyzer

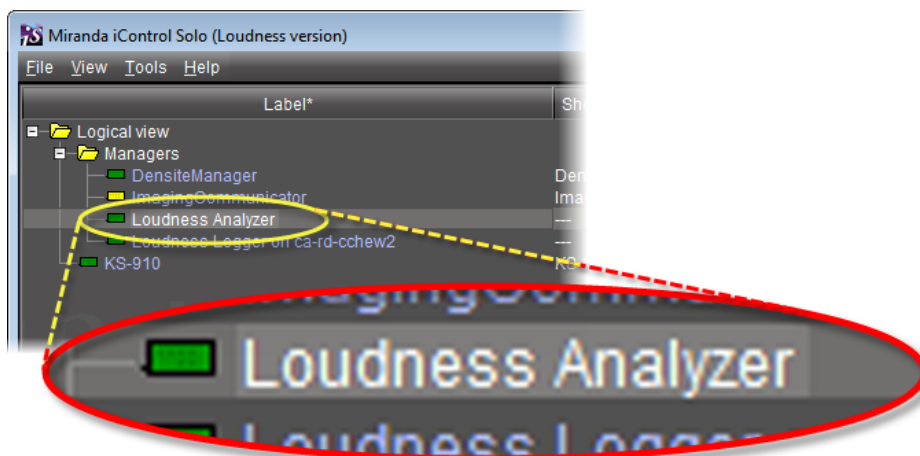
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

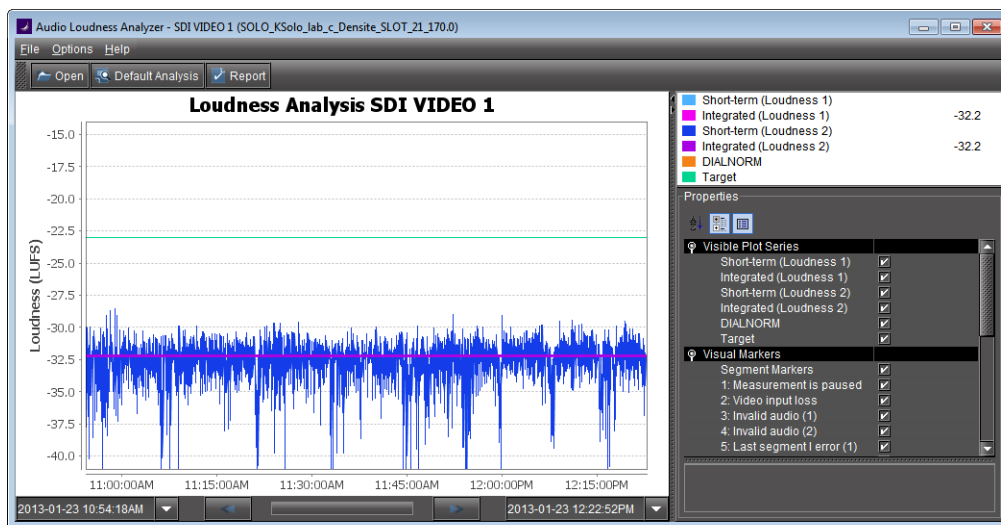
- The PC running iControl Solo is connected to a device which is streaming loudness values, such as a Kaleido-Solo.
- You have already logged loudness data (see [Logging an Audio Stream's Loudness Data](#), on page 55).
- You have opened iControl Solo (see [page 34](#)).

To open Loudness Analyzer

- In iControl Solo, double-click **Loudness Analyzer**.



Loudness Analyzer appears.



Note: **Loudness Analyzer** is time zone-agnostic, meaning it displays a data plot's time code as UTC (coordinated universal time). When you configure your general **Loudness Analyzer** settings, make sure you set the time zone to that of the signal being analyzed.

Specifying a Location for Saving Loudness Data

IMPORTANT: Make sure you have sufficient storage space for loudness data

Ensure you have enough storage space available for loudness data at the specified location. If, when logging loudness data, the logger runs out of space, it will stop logging.

Grass Valley recommends using a controlled remote storage device to ensure adequate storage space.

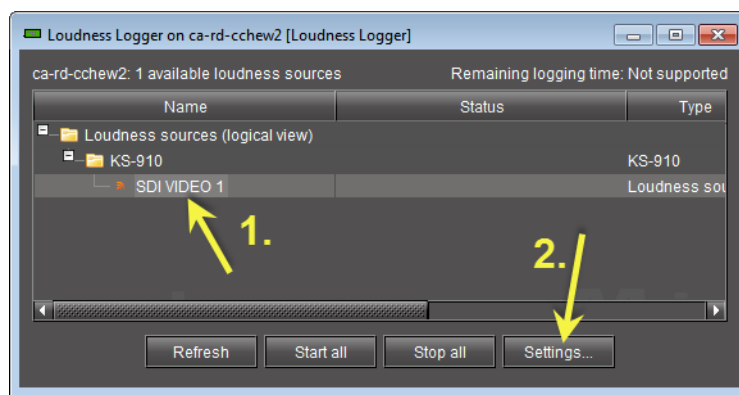
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

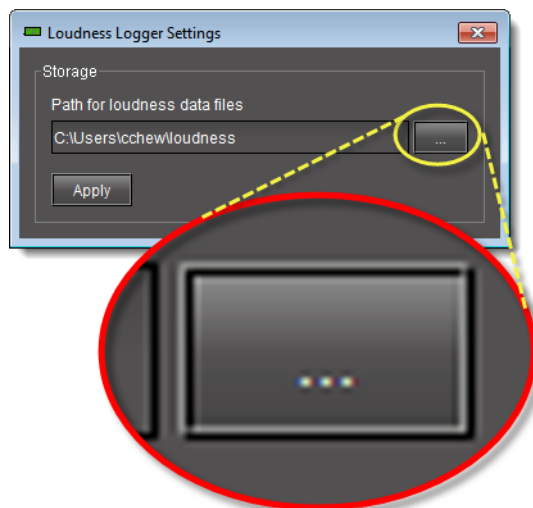
- The PC running iControl Solo is connected to a device which is streaming loudness values, such as a Kaleido-Solo.
- You have opened iControl Solo (see [page 34](#)).

To specify a location for saving loudness data

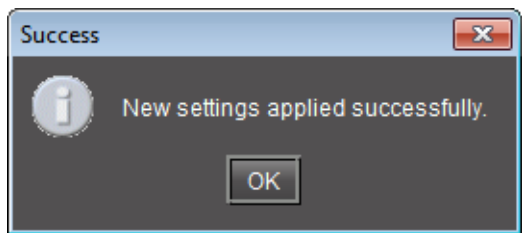
1. In **Loudness Logger**, select the loudness source.
2. Click **Settings**.



3. In the **Loudness Logger Settings** window, click the Browse button to browse for the location in your local file system where you would like to save loudness data.



4. Click **Apply**.
If you chose a valid path, the **Success** message appears.



Logging an Audio Stream's Loudness Data

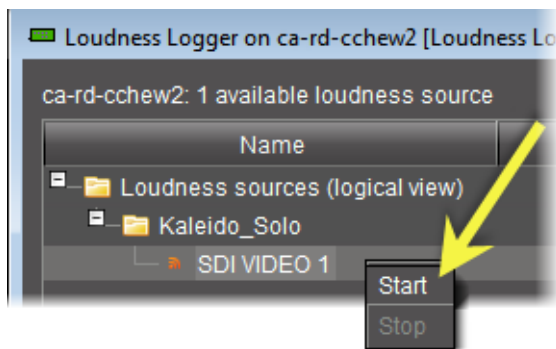
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

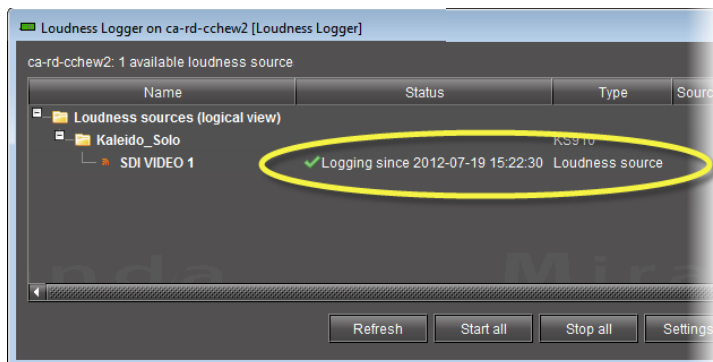
- There is a device streaming loudness values, such as a Kaleido-Solo, visible to iControl Solo.
- You have opened **Loudness Logger** (see [page 51](#)).

To log an audio stream's loudness data

1. In **Loudness Logger**, find the loudness source for which you would like to create a log.
2. Right-click the source and click **Start**.



Loudness Logger begins logging loudness data from the indicated source.



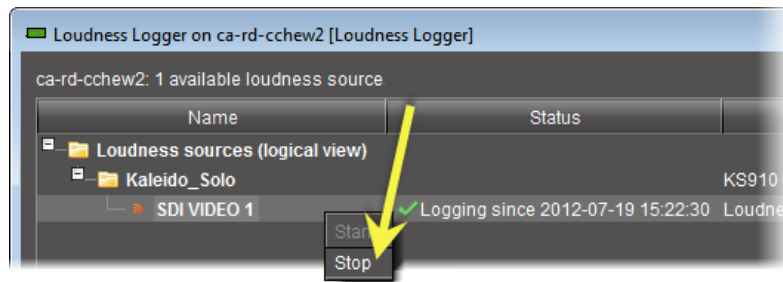
Stopping a Loudness Log Recording

REQUIREMENT

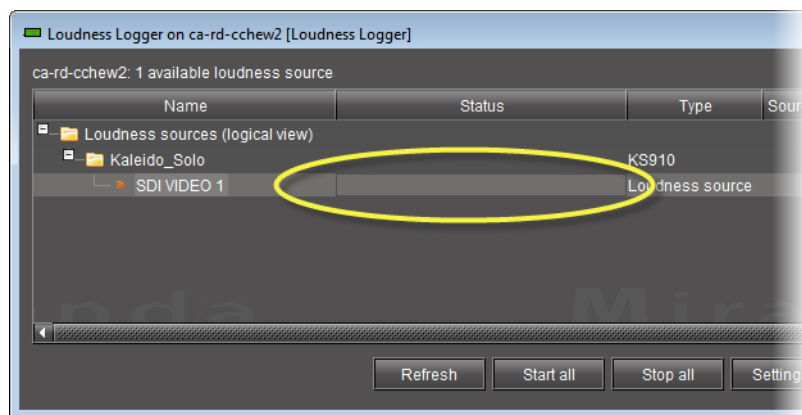
Before beginning this procedure, make sure you have opened **Loudness Logger** (see [page 51](#)).

To stop a loudness log recording

1. In **Loudness Logger**, find the audio source whose loudness data you would like to stop recording.
2. Right-click this audio source and click **Stop**.



The **Status** column should be blank indicating that logging has stopped for this audio source.

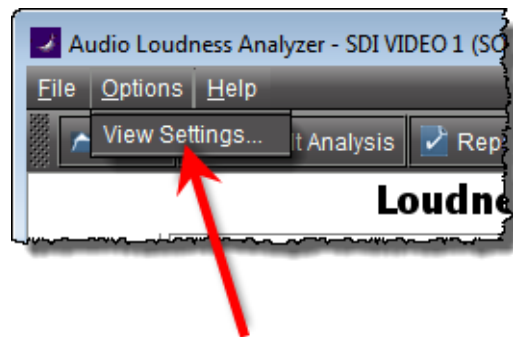


Configuring General Loudness Analyzer Settings

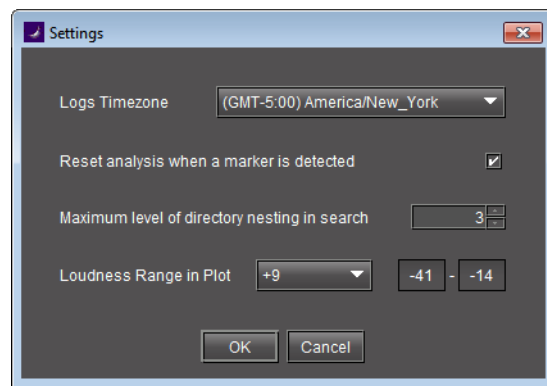
Perform this procedure to define time zone as well as search parameters when searching for loudness log files.

To configure Loudness Analyzer general settings

1. In **Loudness Analyzer**, on the **Options** menu, click **View Settings**.

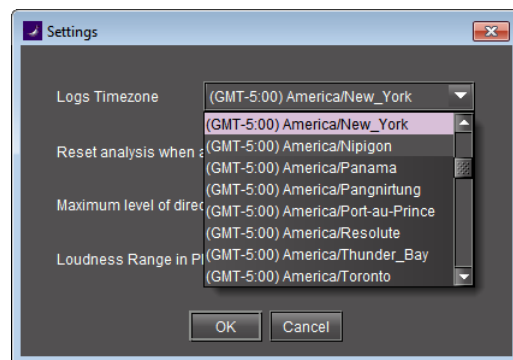


The **Settings** window appears.



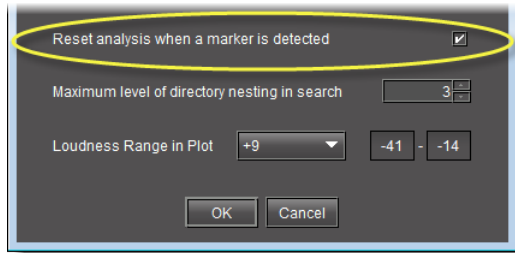
2. Select the time zone that matches your logs.

Note: **Loudness Analyzer** is time zone-agnostic, meaning it displays a data plot's time code as UTC (coordinated universal time). When you configure your general **Loudness Analyzer** settings, make sure you set the time zone to that of the signal being analyzed.

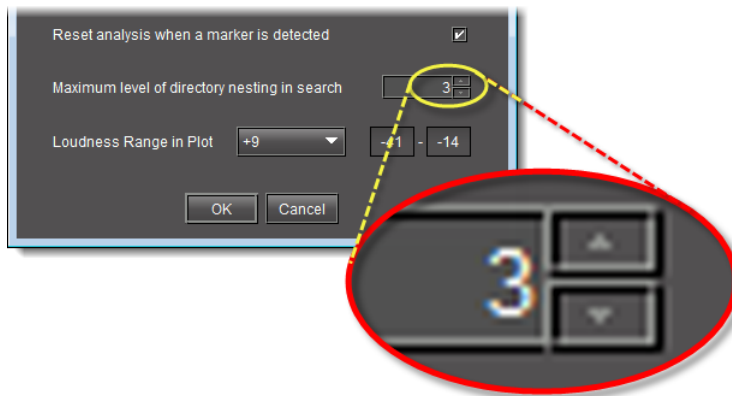


3. Select **Reset analysis when a marker is detected** if you would like for the integrated value to reflect only those data belonging to the segment.

By contrast, if you would like for your integrated value to reflect the data belonging to the entire analysis range, then clear this check box.



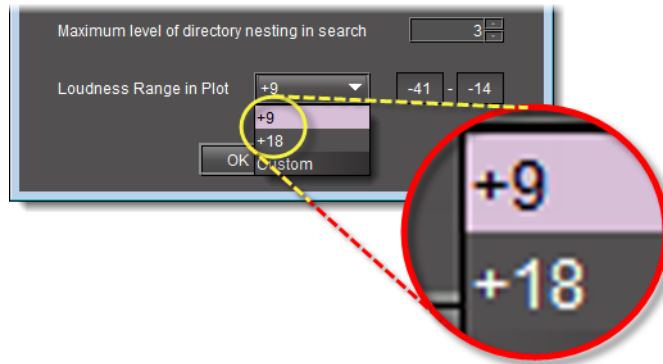
4. Next to **Maximum level of directory nesting in search**, use the *Up* and *Down* arrow buttons to select the number of nested levels in which you would like **Loudness Analyzer** to search for log files.



Notes

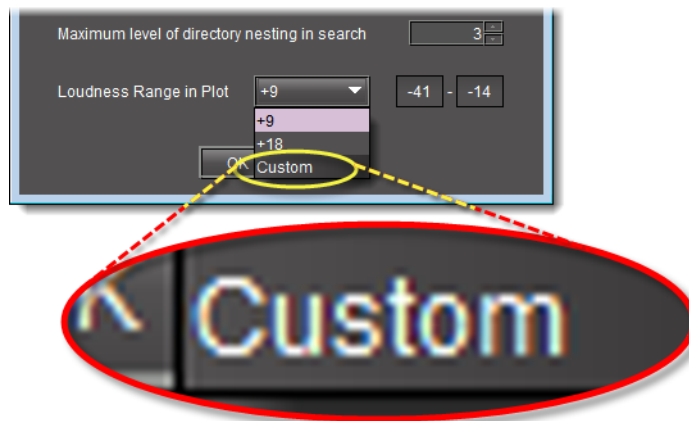
- Selecting **3**, for example, instructs **Loudness Analyzer** to search in the directory named in the path you will define later when you open a loudness log file and then within the next *three* nested levels down.
- If you select **0**, **Loudness Analyzer** only searches for log files within the immediate level of the directory named in the path.
- The deeper you search into nested directories, the slower the search operation will be.

5. Next to **Loudness Range in Plot**, do **ONE** of the following:
 - Select a preset loudness range to be visible in your data plot (taking note of the range values).

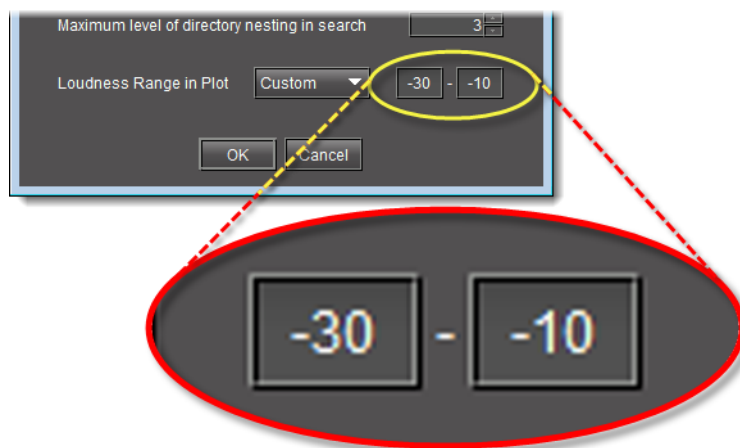


OR,

a) Select **Custom**.



b) Manually enter a custom range.



6. Click **OK**.

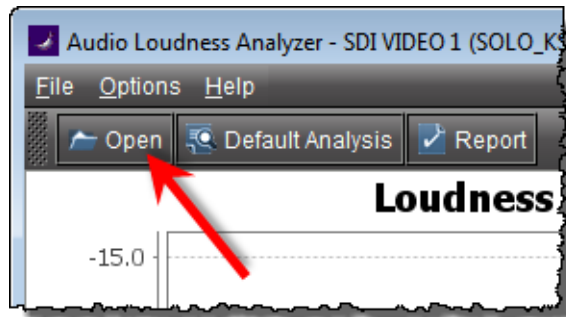
Opening a Loudness Log File in Loudness Analyzer

REQUIREMENT

Before beginning this procedure, make sure you have opened **Loudness Analyzer** (see [page 52](#)).

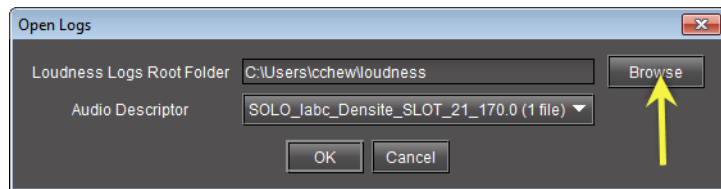
To open a loudness log file

1. In **Loudness Analyzer**, click **Open**.

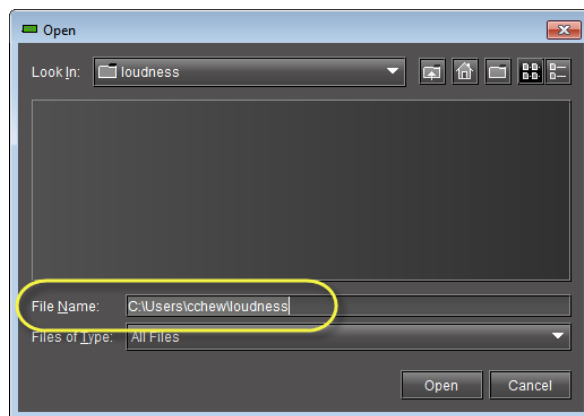


The **Open Logs** window appears.

2. Next to **Loudness Logs Root Folder**, click **Browse**.

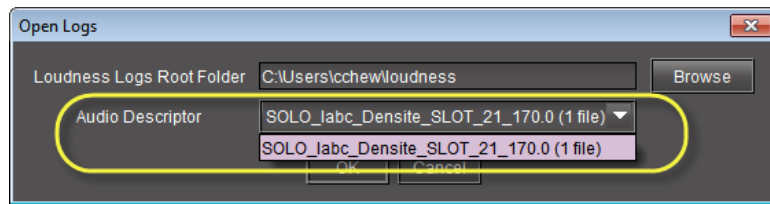


3. In the **Open** window, in the **File Name** box, type the path to the directory containing the loudness data.



4. In the **Open Logs** window, in the **Audio Descriptor** list, select the desired loudness dataset to analyze.

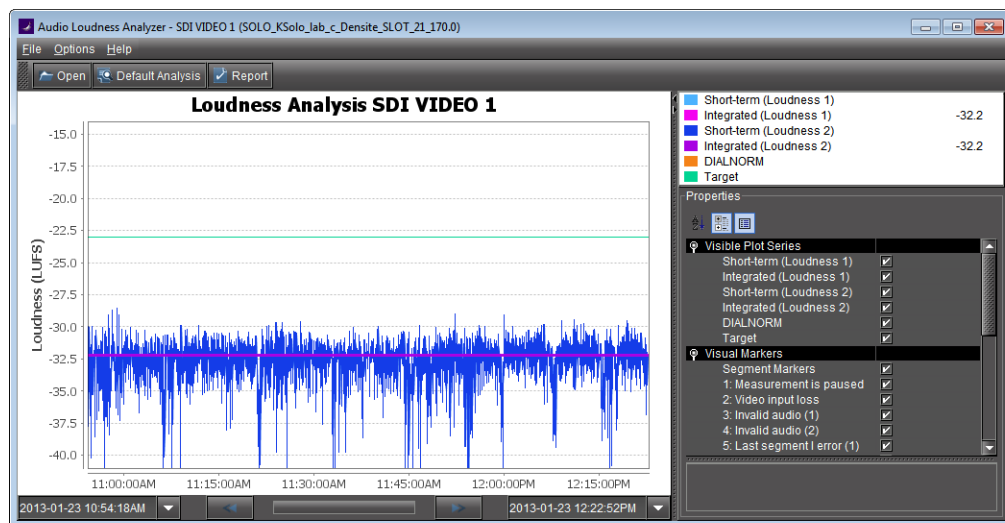
Note: The dataset may contain one file or several files. The number of files in each dataset is indicated in parentheses.



5. Click **Open**.

6. In the **Open Logs** window, click **OK**.

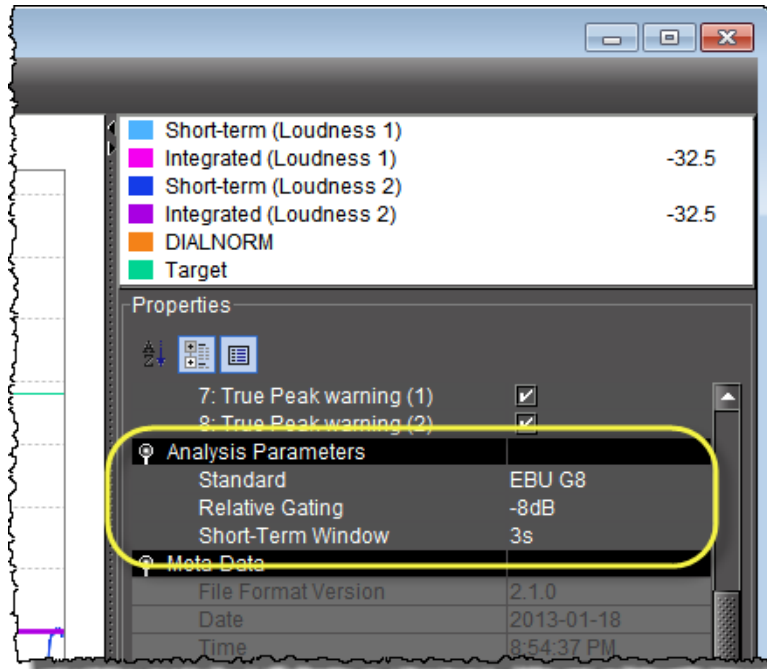
The Loudness Analysis data plot is populated with the loudness data from the log file.



Configuring Loudness Analysis Parameters

There are three loudness analysis parameters you may configure:

- Loudness standard
- Relative gating
- Short-term window



Configurable loudness analysis parameters

Parameter name	Description	Data set
Standard	<p>The program compliance loudness standard against which the loudness data will be measured.</p> <ul style="list-style-type: none"> • EBU G8 refers to the now-obsolete version of EBU-R128 recommending a gate value of -8LU. The currently recommended value is -10LU. • A85 1770-1 leaves the threshold level up to broadcasters and recommends an anchor when available and a gate if necessary (used in USA, Canada). • A85 1770-2 recommends a gate is ALWAYS enabled, having a threshold set to -10LU (used in the European Union). • ARIB TR-B32 is based on A85 1770-2 with a recommended threshold of -24LKFS (absolute gate at -70LKFS, -10LU relative gate, 400ms sample blocks). 	<ul style="list-style-type: none"> • EBU G8 • EBU G10 • ARIB TR-B32 • A85 1770-1 • A85 1770-2
Relative Gating	<p>The concept of filtering out low volume sound by a configurable dB (LU) level below the absolute loudness calculation in order to prevent skewing a loudness calculation with very quiet sounds or silence.</p>	<ul style="list-style-type: none"> • -10dB • -8dB
Short-Term Window ^a	<p>The <i>intermediate</i> length sliding time window.</p>	<ul style="list-style-type: none"> • 1s • 2s • 3s • 4s • 5s • 6s • 7s • 8s • 9s • 10s

- a. Once loudness data is plotted in Analyzer, you should expect for the Short-Term Window plot series not to begin until one cycle of its configured duration to have elapsed. This is due to there not being enough data before this point with which to produce a moving average.

Note: Changes you make to any analysis parameters are immediately applied to a new analysis.

Zooming into Loudness Analyzer's Data Plot

After loading a loudness data file into **Loudness Analyzer**, the plot of the loudness data may not show, by default, the granularity of detail you might like to see at first. Additionally, the time period covered by the data may cover too large a time span.

You can effectively zoom into the data by specifying a subset time period within the initial graph, thereby increasing granularity and removing extraneous data.

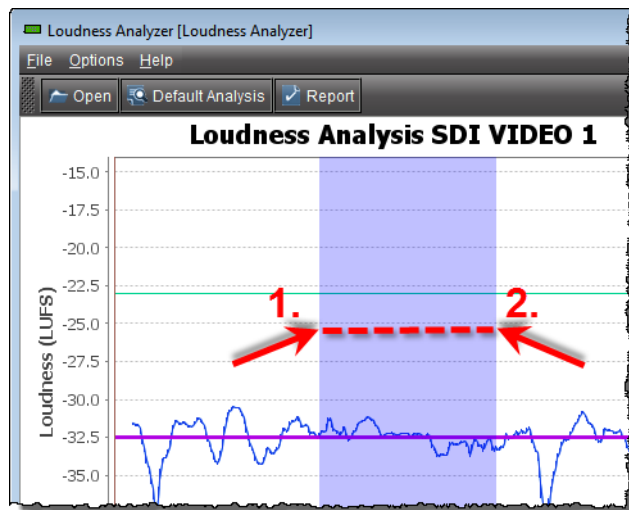
Note: You may choose to either configure analysis parameters before you zoom or after you zoom with the same end-effect. You will lose analysis parameter data **ONLY** when you click **Default Analysis**.

REQUIREMENT

Before beginning this procedure, make sure you have opened a loudness data file in **Loudness Analyzer** (see [page 60](#)).

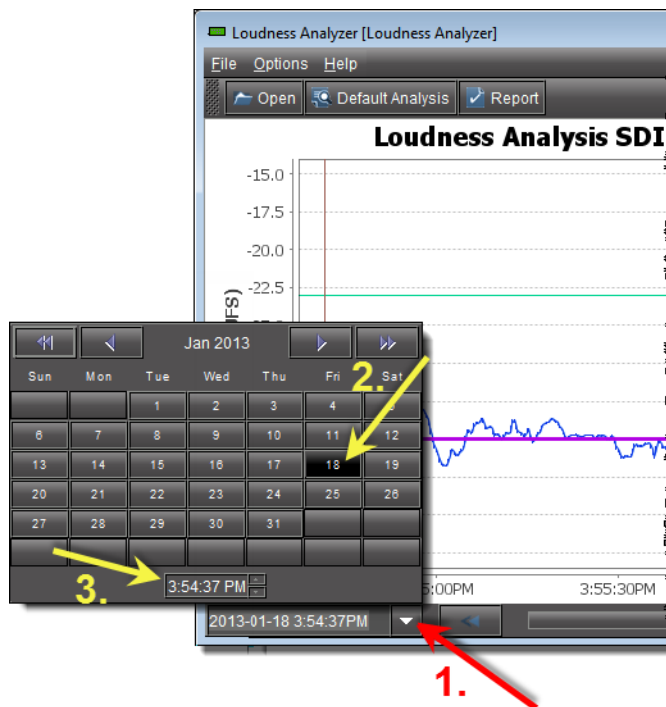
To zoom into Loudness Analyzer's data plot

1. In **Loudness Analyzer**, do **ONE** of the following two sub-procedures:
 - a) On the data plot, use your mouse to click and hold on any point along the vertical line marking the desired beginning time of your zoom.
 - b) Drag the mouse to any point along the vertical line marking the desired end time of your zoom.
 - c) Release the mouse button.



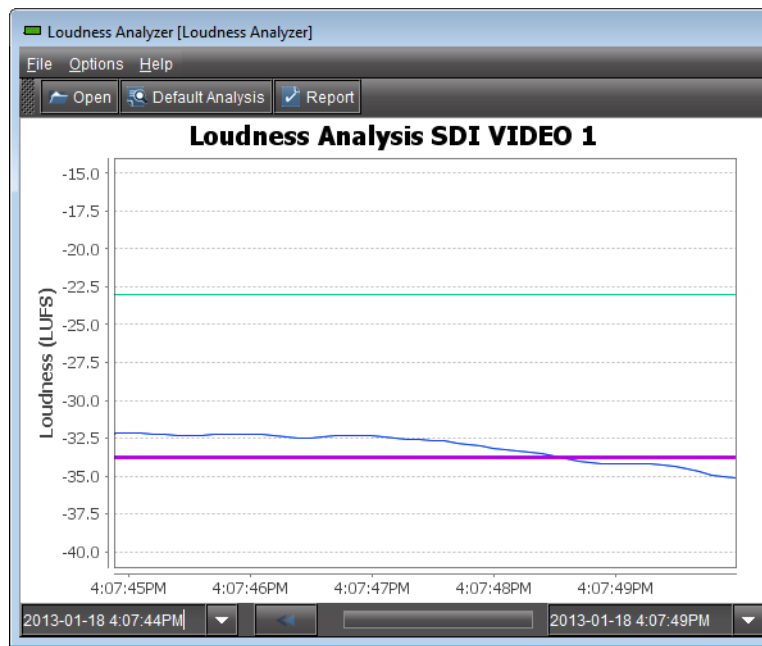
OR,

- a) On the bottom-left side of **Loudness Analyzer**, use the *Start-time* calendar to indicate the exact beginning date and time of your zoom.



- b) On the bottom-right side of **Loudness Analyzer**, use the *End-time* calendar to indicate the exact end date and time of your zoom.

Loudness Analyzer reloads the data stream using the new time range demarked by the new start- and end-times.



2. Repeat [step 1](#) if you must zoom into the data plot further.

Generating a Loudness Analysis Report

Loudness Analyzer permits you to generate a report in PDF format. The report provides the data currently displayed in **Loudness Analyzer**, including the chart at its current scaling (zoom), as well as the parameters configured.

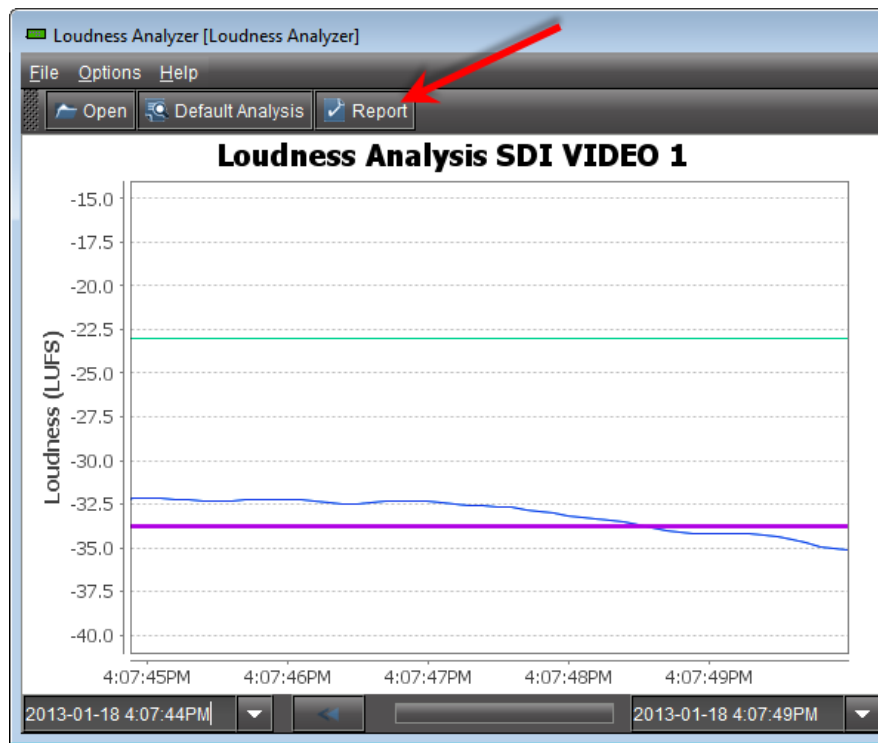
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

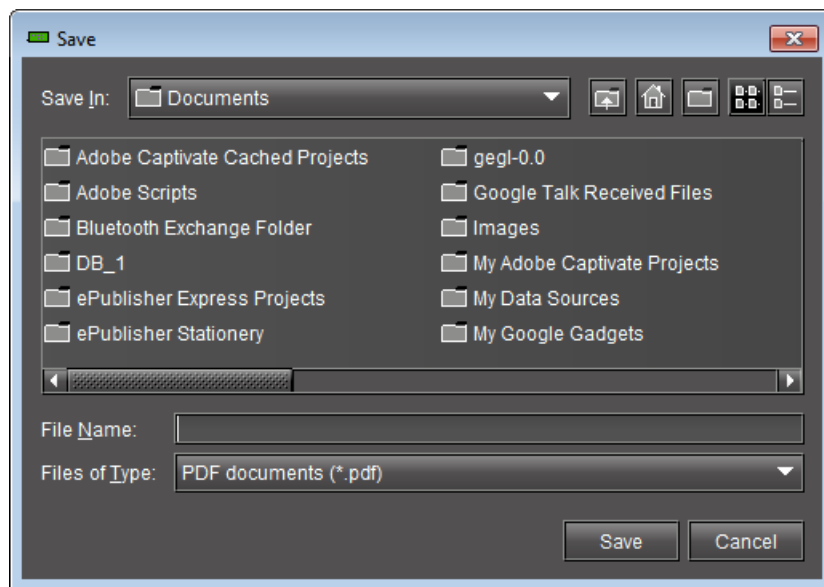
- You have opened a loudness data file in **Loudness Analyzer** (see [page 60](#)).
- You have adjusted the scaling of **Loudness Analyzer's** data plot to the desired level (see [Zooming into Loudness Analyzer's Data Plot](#), on page 63).
- You have selected the plot series you would like to include in your report and selected the desired analysis parameters (see [Configuring Loudness Analysis Parameters](#), on page 61).

To generate a loudness analysis report

1. In **Loudness Analyzer**, click **Report**.

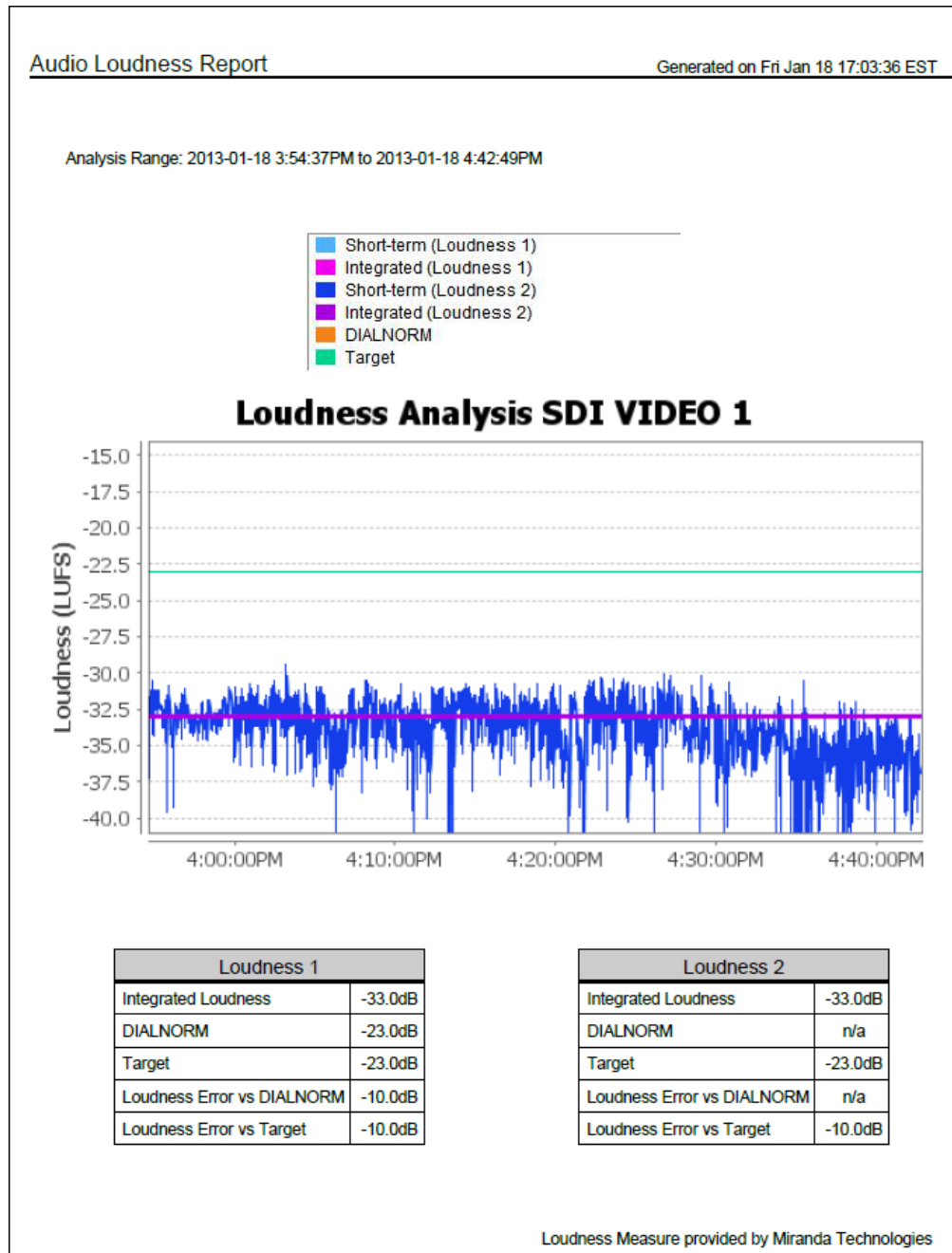


The **Save** window appears.



2. Save the PDF file to a local directory.

The PDF file contains all of the information currently in view in **Loudness Analyzer**.



Loudness analysis report (taken from the PDF output)

Working with Densité Upgrade Manager

From time to time, improvements or fixes may become available that can be applied to an existing Densité card by upgrading its firmware and software. Firmware and software updates are available as a bundled package. To determine if an update package is available for a specific card, please contact *Grass Valley Technical Support* (see [Contact Us](#), on page 90).

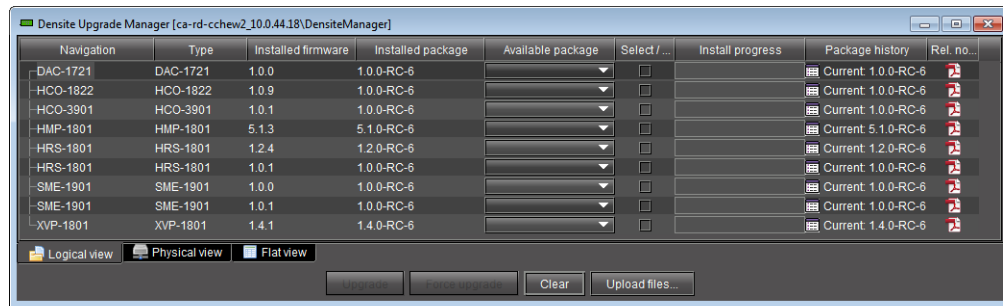
Opening Densité Upgrade Manager

REQUIREMENT

Before beginning this procedure, make sure the Densité frame housing the card whose upgrade package would like to change is visible in the **Densité Manager** of iControl Solo (see [step 1](#) of [Adding Densité Communicator Services](#) on page 5).

To open Densité Upgrade Manager

- In iControl Solo, on the **Tools** menu, click **Densité Upgrade Manager**.
Densité Upgrade Manager appears.



Changing a Densité Card's Installed Package

The package of a Densité card consists of a version of software and a version of firmware bundled together. You can upgrade your card's firmware and software simply by upgrading the installed package. Use iControl Solo's **Densité Upgrade Manager** to manage your card packages and Densité card upgrades.

IMPORTANT: System behavior

Regardless of whether your installed package is upgraded, downgraded or rolled back, software always installs from a package stored on your local file system. If you use the **Upgrade** button, firmware installs *ONLY IF* it has a different version number (either newer or older) than the currently installed firmware.

If you would like to force your Densité card to install same-version firmware, use the *Force upgrade* functionality (see [page 71](#)).

REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have opened **Densité Upgrade Manager** (see [page 68](#)).
- The Densité cards whose installed packages you would like to change are visible in **Densité Upgrade Manager**.
- The package you would like to install on your Densité card has already been uploaded (see [Uploading a Densité Card Package](#), on page 75).

To change a Densité card's installed package

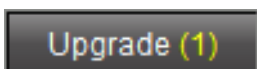
1. In **Densité Upgrade Manager**, verify if the package you would like to install on your Densité card is listed in the **Available package** column.

Navigation	Type	Installed package	Available package
DAC-1721	DAC-1721	1.0.0-RC-6	
HCO-1822	HCO-1822	1.0.0-RC-6	
HCO-3901	HCO-3901	1.0.0-RC-6	
HMP-1801	HMP-1801	5.1.0-RC-6	1.1.0-RC-3 1.0.0-RC-6

2. In the **Available package** column, in the row corresponding to the card to be upgraded or downgraded, select the package you would like to use.

In the row corresponding to each Densité card you are upgrading or downgrading, the following should occur:

- The **Select/Bypass** check box is selected.
- The **Upgrade** button bears the **(N)** suffix, where *N* indicates the number of cards selected for package installation.

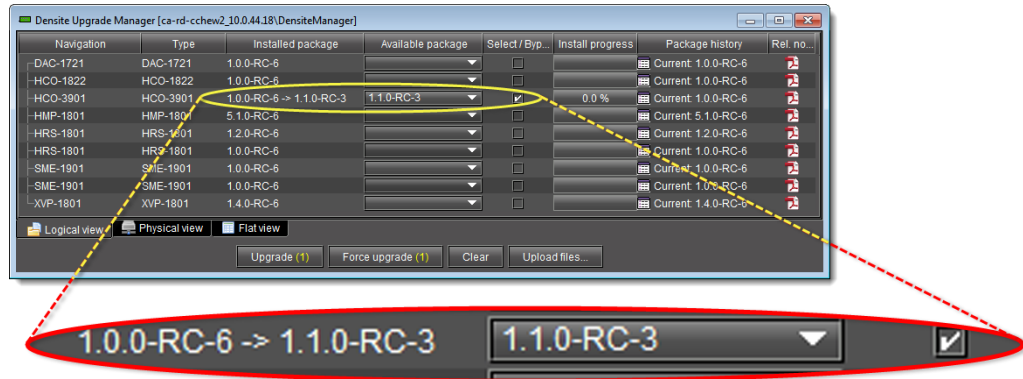


- The selected package appears in the **Available package** column.
- The upgrade/downgrade paths of firmware, and package are displayed respectively in the **Installed firmware**, and **Installed package** columns.



Note: The paths for firmware and software are displayed only if you have first manually made visible the **Installed firmware** and **Installed package** columns of **Densité Upgrade Manager** (see [page 77](#)).

Using iControl Solo Changing a Densité Card's Installed Package

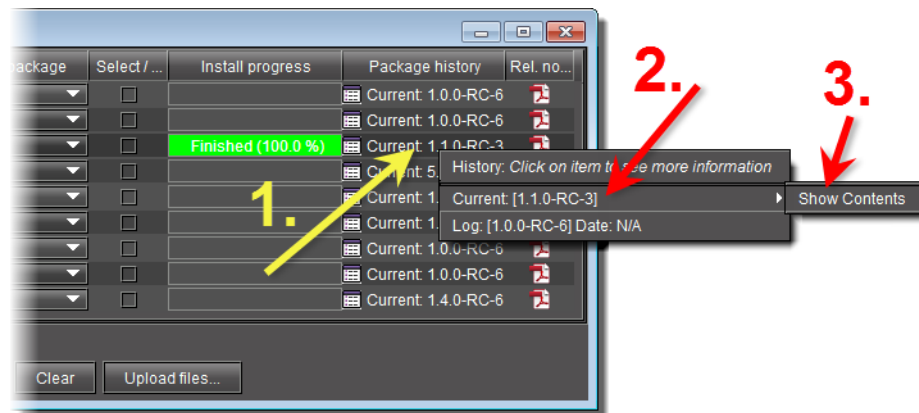


Selected package with package upgrade path displayed

IMPORTANT: In rare circumstances, you may have a **Beta** version of firmware installed on your Densité card and may wish to upgrade to a full production version of firmware bearing the same version number. In this situation, if you use the **Upgrade** button, **Densité Upgrade Manager** will not install the firmware.

To force **Densité Upgrade Manager** to install firmware of the same-version as the currently installed firmware, click **Force upgrade** instead of **Upgrade**. (see [Forcing a Same-Version Firmware Installation onto a Densité Card](#), on page 71).

3. Click **Upgrade** (or in the rare situation detailed above, click **Force upgrade**).
The **Upgrade confirmation** window appears.
4. Click **Yes**.
During the upgrade, a progress bar appears in the **Install progress** column and the card icon becomes yellow.
When the process is finished, the **Upgrade Succeeded** message appears.
5. If you would like to view a log of this upgrade session, click the cell at the intersection of the **Package history** column and the row corresponding to the Densité card whose installed package you just changed.
6. Point to **Current**, and then click **Show Contents**.



The last upgrade's status (the status of the currently installed package) is displayed on a *per component* basis.

Forcing a Same-Version Firmware Installation onto a Densité Card

Perform this procedure **ONLY** in the rare situation that the card you would like to upgrade currently has a *Beta* version of firmware. If this is the case, using the **Upgrade** button will not upgrade the firmware to the full production version of firmware bearing the same official release number (even if **Densité Upgrade Manager** indicates both the package and software versions have been upgraded). Only the **Force upgrade** button successfully installs same-version firmware.

Note: After performing a forced upgrade of firmware, executing a *rollback* operation will roll back the card to the pre-upgrade firmware even if the two versions carry the same version number. In effect, after a forced upgrade, by selecting a *Rollback* version (under **Available package**), you are in fact performing a *forced rollback* operation.

REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have opened **Densité Upgrade Manager** (see [page 68](#)).
- The Densité cards whose firmware and software you would like to upgrade are visible in **Densité Upgrade Manager**.
- The package you would like to use to upgrade your Densité card has already been uploaded (see [Uploading a Densité Card Package](#), on page 75).

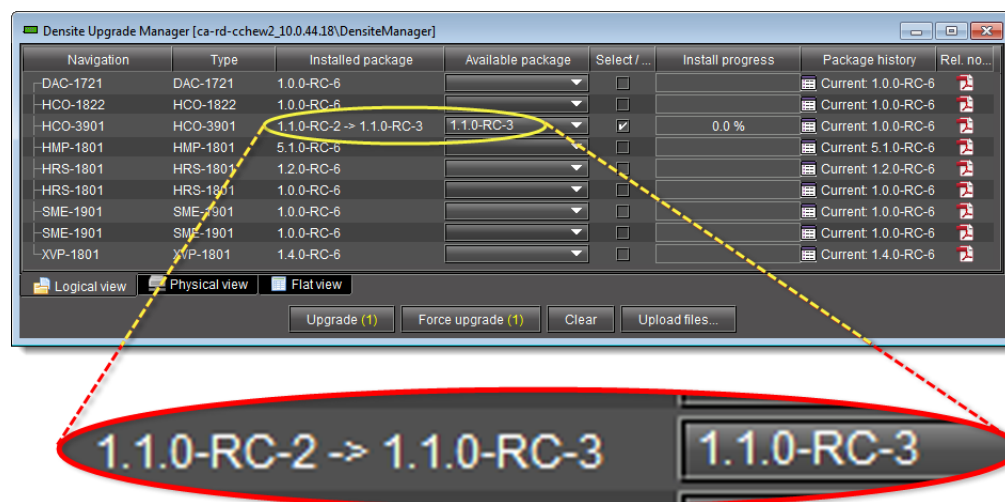
To force a same-version firmware installation onto a Densité card

1. In **Densité Upgrade Manager**, verify if the package you would like to install on your Densité card is visible in the **Available package** column.

Note: Grass Valley recommends displaying the **Installed firmware** column of **Densité Upgrade Manager** for this procedure. For steps on how to display this column, see [Viewing a Densité Card's Installed Firmware Version](#), on page 77.

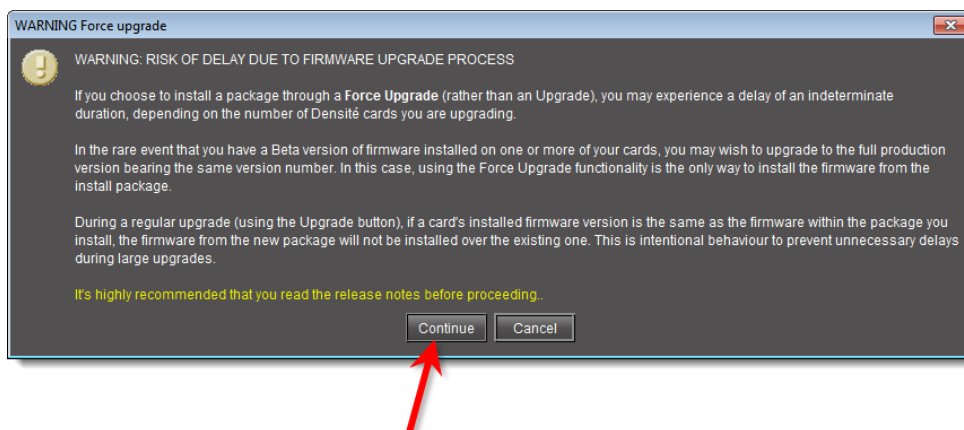
- In the **Available package** column, select the desired package.
- In the **Installed firmware** column, take note of the upgrade path.

If the displayed upgrade path indicates that the card is not moving to a different firmware version (for example, if the displayed upgrade path is 3.1.2 -> 3.1.2), then to override the firmware you must use the *Force upgrade* functionality. Otherwise, you may use the *Upgrade* functionality.¹



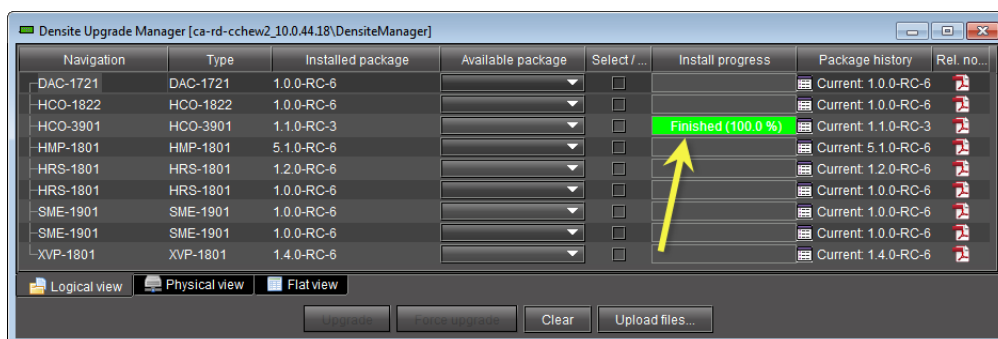
- Click **Force upgrade**.
A confirmation message appears.
- Click **Continue**.

1. The real-world situation in which you will find it necessary to override typical **Upgrade** button functionality (that is, to force an upgrade of same-version firmware from a selected package) would be if your installed firmware is a *Beta* version and the embedded firmware in the selected package is the production version of firmware bearing the same release number.



The upgrade proceeds.

When the upgrade operation is complete, a **Finished** message appears in the **Install progress** column.



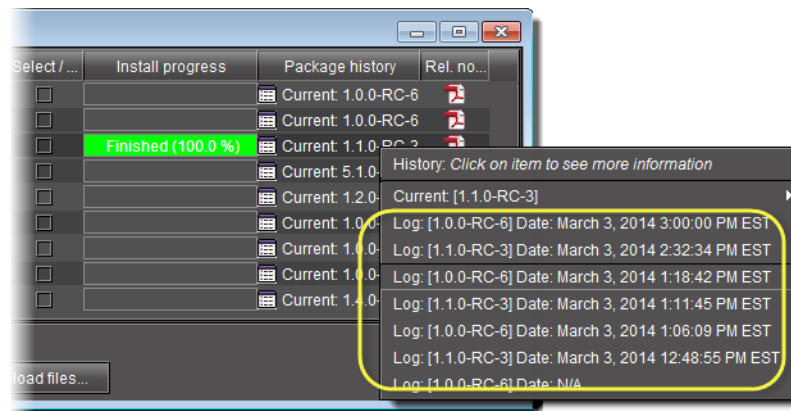
Viewing Upgrade Logs

REQUIREMENT

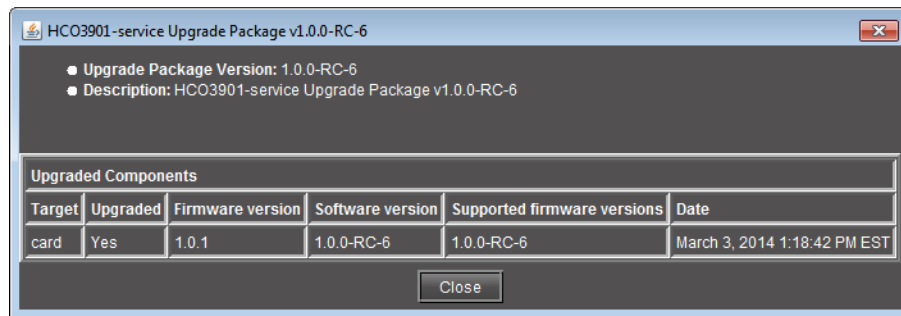
Before beginning this procedure, make sure you have opened **Densité Upgrade Manager** (see [page 68](#)).

To view upgrade logs

1. In **Densité Upgrade Manager**, in the row corresponding to the card whose upgrade history you would like to view, click in the **Package history** column.
2. Click the upgrade log you wish to view.



The selected log is displayed.



Rolling Back a Card's Installed Package to the Pre-Upgrade Version

Perform this procedure if, after installing a package on a Densité card, you decide to restore both the firmware and software of the card to their respective pre-installation versions.

Note: In the case where you are rolling back a package installation resulting from a *Force upgrade* operation, the rollback operation effectively becomes a *Force rollback* operation. That is, even though the firmware currently installed and the firmware you are rolling back to bear the same version number, the rollback will proceed.

REQUIREMENTS

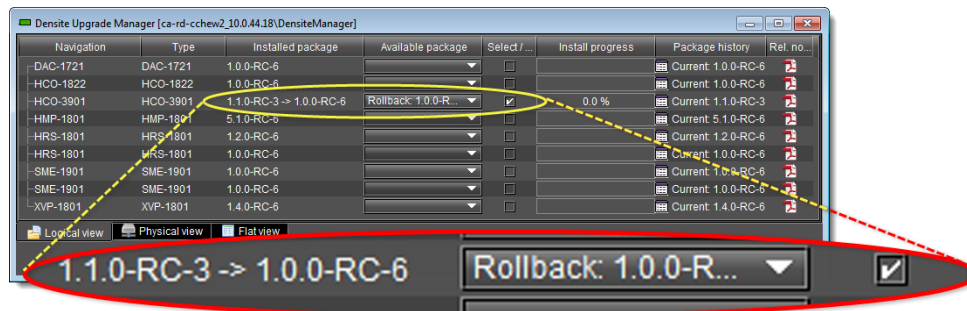
Make sure you meet the following conditions before beginning this procedure:

- You have opened **Densité Upgrade Manager** (see [page 68](#)).
- The Densité cards whose firmware and software you would like to downgrade are visible in **Densité Upgrade Manager**.
- The package you would like to use to downgrade your Densité card has already been uploaded (see [Uploading a Densité Card Package](#), on page 75).

To roll back a Densité card's installed package to the pre-upgrade version

1. In **Densité Upgrade Manager**, in the row corresponding to the card whose installed package you would like to roll back, select **Rollback <version #>** in the **Available package** column.

The **Select/Bypass** check box for that card is selected, indicating that this card will undergo a change in its installed package, and the rollback path is indicated in the **Installed package** column.



2. Click **Upgrade**.

The rollback operation begins. You can monitor the progress of the rollback with the progress bar in the **Install progress** column.

When the rollback operation is complete, the **Install progress** column displays a success message.

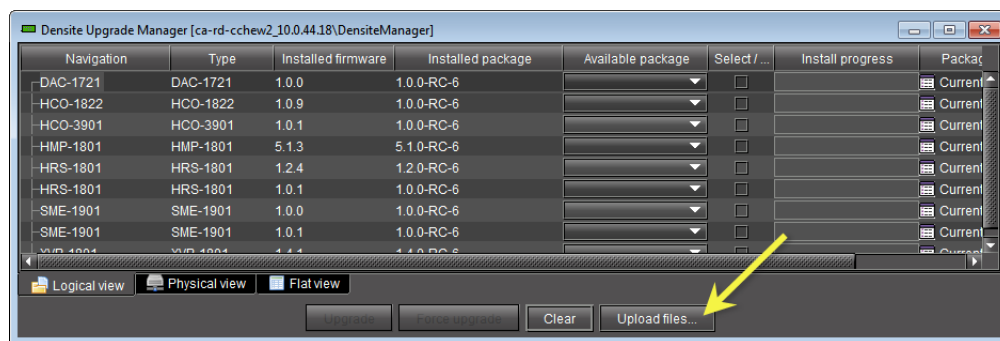
Uploading a Densité Card Package

REQUIREMENT

Before beginning this procedure, make sure you have access to the upgrade package file on your local file system. If you do not have the correct upgrade package, contact *Grass Valley Technical Support* (see [Contact Us](#), on page 90).

To upload an upgrade package

1. In **Densité Upgrade Manager**, click **Upload files**.

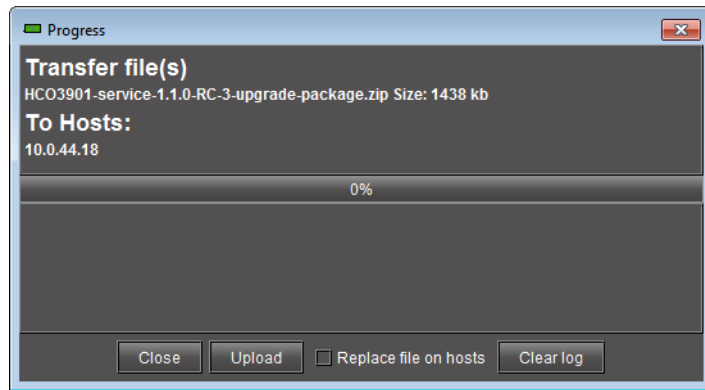


A file browsing window appears.

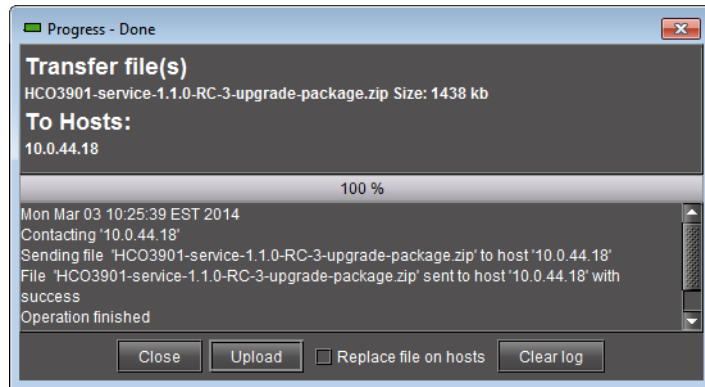
2. Navigate to the appropriate directory in your local file system, select the required upgrade package file, and then click **Open**.

Note: You may select more than one package file to upload at a time.

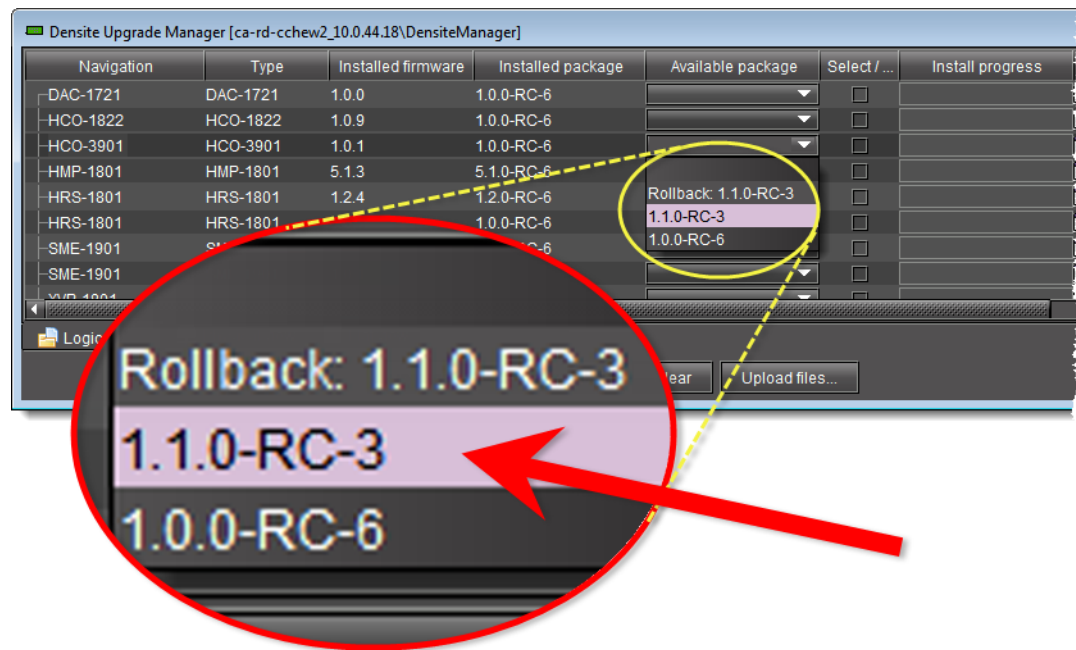
A message window appears, prompting you to start the upload process.



3. Click **Upload**.



4. Click **Close** to close the window.
5. In the **Available package** column of **Densité Upgrade Manager**, verify that the new upgrade package is present.



Note: In order to see the newly uploaded package in the **Available package** column, you must make sure you are reading from a row corresponding to a Densité card compatible with the newly uploaded package firmware and software (i.e., if you uploaded an XVP-3901 package, check the available packages in a row corresponding to an XVP card).

Viewing a Densité Card's Installed Firmware Version

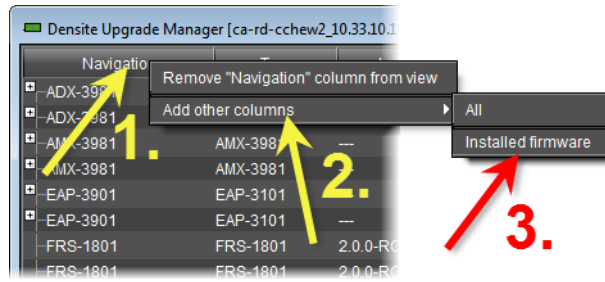
You may decide to make the installed firmware version of your Densité cards visible in **Densité Upgrade Manager**. This may be desired, for example, if you would like to see more clearly if a package upgrade resulted in an installation of its firmware as well.

REQUIREMENT

Before beginning this procedure, make sure you have opened **Densité Upgrade Manager** (see [page 68](#)).

To view a card's firmware version

1. In **Densité Upgrade Manager**, right-click anywhere in the header row, point to **Add other columns**, and then select **Installed firmware**.



2. Perform the action of [step 1](#) again, this time selecting **Installed package**.

Opening GV Node Manager

Along with the other elements that represent a GV Node frame in iControl, which typically include service panels for the IFM-2T fabric module, Frame Controller module, and Frame Reference modules, GV Node Manager is available from iControl Solo.

REQUIREMENT

Before beginning this procedure, make sure You have added your GV Node frame to a Densité manager (see [Adding GV Node Services](#), on page 9).

To open GV Node Manager

1. In iControl Solo's *Logical view*, open the *Managers* folder, and then the *GV Node Manager* folder.



Alternatively, locate your GV Node Manager in the *Physical*, or in the *Flat* view.

2. Double-click the GV Node Manager you would like to open.
The **GV Node Manager** window opens.

GV Node Manager/CA-RD-SBOLDUC2/GVN1 (GV Node Manager)																							
#	Card	Rear panel	Options	Inputs to Internal Fabric Module									Outputs from Internal Fabric Module										
				1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9		
1	XIQ-4901	XIQ-4901-4SRP-D	None	Off	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI	SDI				
2	Empty																						
3	Empty																						
4	KMX-4911	KMX-4911-36x4-4Q		SDI	SDI										SDI	SDI	SDI	SDI	SDI				
5	KMX-4911	KMX-4911-36x4-4Q		SDI	SDI										SDI	SDI	SDI	SDI	SDI				
6	Empty																						
7	Empty																						
8	KMX-4911	Absent		SDI	SDI										SDI	SDI	SDI	SDI	SDI				
9	KMX-4911	Absent		SDI	SDI										SDI	SDI	SDI	SDI	SDI				
10	Empty																						
11	Empty																						
12	Empty																						
13	Empty																						
14	Empty																						
15	KMX-4911	KMX-4911-36x4-4Q		SDI	SDI										SDI	SDI	SDI	SDI	SDI				
16	KMX-4911	KMX-4911-36x4-4Q		SDI	SDI										SDI	SDI	SDI	SDI	SDI				
IFM-2T IFM-2T-RP				Total Inputs to Internal Fabric Module:					20					Total Outputs from Internal Fabric Module:					62				

Installing IC-USB

This appendix provides instructions on installing the IC-USB device.

Key Concepts

IC-USB

The IC-USB device is a USB-to-RS-422 converter. It is used to establish communication between your PC or laptop, and serial devices such as the Quartet 2 and Symphonie Grass Valley Imaging Series housing frames.

IC-USB Driver

The IC-USB driver is automatically installed by Windows Update. When you first connect the IC-USB device to your PC or laptop, Windows will detect the new hardware, and download the appropriate (EdgePort) driver.

Detailed Directions

Connecting the IC-USB Device to a PC or Laptop

To connect the converter to your PC or laptop

1. Plug the Type A (flat) connector end of the USB cable into the USB port located in the back of your PC.
2. Plug the Type B (square) end of the USB cable into the IC-USB device.

Connecting the IC-USB Device to a Grass Valley Quartet 2 Frame

To connect the converter to a Grass Valley Quartet 2 frame

1. Connect the IC-USB device's DE-9 connector to the supplied RJ-45-to-DE-9 female adaptor.
2. Connect one end of the supplied Ethernet cable to the RJ-45-to-DE-9 female adaptor, and the other end to one of the RJ-45 ports in the back of the Quartet 2 frame:

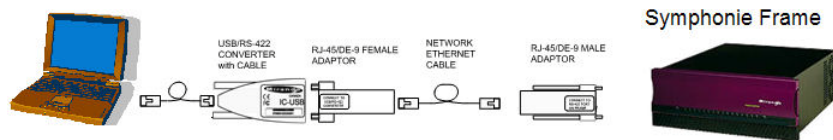


IC-USB connected to a Grass Valley Quartet 2 frame

Connecting the IC-USB Device to a Grass Valley Symphonie Frame

To connect the IC-USB to a Grass Valley Symphonie Frame

1. Connect IC-USB, RJ-45-to-DE-9 female adaptor and Ethernet cable as described under [Connecting the IC-USB Device to a Grass Valley Quartet 2 Frame](#), above.
2. Connect the RJ-45-to-DE-9 male adaptor to the Ethernet cable.
3. Connect the male adaptor to one of the RS-422 female DE-9 ports in the back of the Symphonie frame:



IC-USB connected to a Grass Valley Symphonie frame

Determining the IC-USB COM Port Number

The IC-USB COM port number is required to configure the Grass Valley iControl Solo Imaging Communicator service.

To determine the COM port number associated with IC-USB

1. On the **Start** menu, point to **Programs**, then to **Inside Out Networks**, and click **Edgeport Configuration Utility**.
2. Expand the Edgeport 1i line item from the **General** Tab.
The COM port number is specified in brackets.

Installing a Single Imaging Frame

Ensure that the frame is properly terminated (refer to the Installation Guide for your Quartet 2 or Symphonie frame).

Installing Multiple Imaging Frames

A maximum of four Imaging frames (Quartet 2 and Symphonie) can be daisy-chained together. Each individual frame in the daisy chain requires a different serial identification assignment. The last frame in the chain must be terminated (refer to the Installation Guide for your Quartet 2 or Symphonie frame).

Network Firewall Configuration



TCP/IP Port Usage

The various iControl Solo services require access to specific ports. The tables below describe the ports used in a multi-site configuration. In networks where a firewall is present between device A and device B, the ports used to communicate from device A to device B must be open on the incoming (external) side of the firewall.

From Client to Application Server

Service	Port	Transport	Notes
DMT	5432	TCP	Communication between Data Management tool and Postgres database
DSS Admin	1220	TCP	Darwin Streaming Server Admin
FTP	20, 21	TCP	Used for maintenance purposes (file transfer). SSH can be used instead. Not necessarily required (can be turned off). iControl Solo upgrade page uses HTTP transfer.
HTTP	80	TCP	
iControl Solo Gateway	10001, 13000	TCP	Optional, only if IP scope probe option is enabled or RCP-100/RCP-200 client required to communicate with Application Server.
Location services	4160, 8000-8010	TCP, UDP	Responsible for discovery and communications between devices/services on iControl Solo network.
Java RMI	32768-65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between client and Application Server. This range can be restricted to match specific security requirements. A minimum of 4000 ports should be allocated. Please contact Grass Valley Technical Support, for more information ().
Java RMID	1098-1099	TCP, UDP	Remote Method Invocation Daemon to support client/server connections. Required for communication between client and Application Server.
LDAP	389	TCP	Required for the iControl Solo Access Control/Authentication feature (user login).
RTSP	554 6970-6999	TCP, UDP UDP	Real Time Streaming Protocol required for thumbnail streaming. Streams from probes sent to clients from Application Server.
SSH, SCP	22	TCP	Used for maintenance purposes. Secure Shell Login and Secure Remote Copy are required to log on to an Application Server for maintenance. You can use an SSH client like PuTTY.

(Continued)

Service	Port	Transport	Notes
Streaming Sync	1555	TCP, UDP	Required for thumbnail streaming
TELNET	23	TCP	Used for maintenance purposes (remote login). SSH can be used instead. Less secure than SSH, but useful when a SSH client is not available. Can be turned off.

From Application Server to Client

Service	Port	Transport	Notes
Java Jini	4160, 8000-8010	TCP, UDP	Responsible for discovery and communications between devices/services on iControl Solo network.
Java RMI	49152-65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between client and Application Server.
Java RMID	1098-1099	TCP, UDP	Remote Method Invocation Daemon to support client/server connections. Required for communication between client and Application Server.
RTSP	554 6970-6999 20000-65535	TCP, UDP UDP UDP	Real Time Streaming Protocol. Streams from probes sent to clients from Application Servers. The 20000-65535 range can be restricted to match specific security requirements. A minimum of 10,000 ports should be allocated.
SMTP	25	TCP	Simple Mail Transfer Protocol, for email alerts

Between Application Server and External Management System

Service	Port	Transport	Notes
HTTP	5955	TCP	Used to monitor and control cards housed in Densité or GV Node frames registered with <i>Densité Manager 1</i> , via a REST API.
	5953		Used to monitor and control cards housed in Densité or GV Node frames registered with <i>Densité Manager 2</i> , via a REST API.
	5951		Used to monitor and control cards housed in Densité or GV Node frames registered with <i>Densité Manager 3</i> , via a REST API.
	5957		Used to monitor and control alarm status information in a GSM, via a REST API.

From Application Server to Allégro-1

Service	Port	Transport	Notes
Java Jini	4160, 8000-8010	TCP, UDP	Responsible for discovery and communications between devices/services on iControl Solo network. Uses multicast in remote regions only, unicast and multi-unicast elsewhere.
Java RMI	49152-65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between Application Server and Allégro-1.
Java RMID	1098-1099	TCP, UDP	Remote Method Invocation Daemon to support client/server connections. Required for communication between Application Server and Allégro-1.

Note: If an Application Server is used as an Allégro-1 Streaming Relay, additional ports are required.

From Client to Allégro-1

Service	Port	Transport	Notes
Java RMI	49152-65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between client and Allégro-1 applications.
Tomcat	8080	TCP	Required to access Allégro-1 Web pages

From Allégro-1 to Client

Service	Port	Transport	Notes
Java RMI	49152-65535	TCP	Remote Method Invocation (client/server communication). Dynamic allocation of ports. Required for communication between client and Allégro-1 applications.
RTSP	554 6970-6999 20000-65535	TCP, UDP UDP UDP	Real Time Streaming Protocol. Streams from probes and Allégro-1 sent to clients from Allégro-1 servers. The 20000-65535 range can be restricted to match specific security requirements. A minimum of 10,000 ports should be allocated.

From Allégro-1 to Application Server

Service	Port	Transport	Notes
Java Jini	4160, 8000-8010	TCP, UDP	Responsible for discovery and communications between devices/services on iControl Solo network. Uses multicast in remote regions only, unicast and multi-unicast elsewhere.
Java RMI	32768–65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between Allégro-1 and Application Server. This range can be restricted to match specific security requirements. A minimum of 4000 ports should be allocated.
Java RMID	1098–1099	TCP, UDP	Remote Method Invocation Daemon to support client/server connections. Required for communication between Allégro-1 and Application Server.

From Local Application Server to Remote Application Server

Service	Port	Transport	Notes
Event log	5432	TCP	Communication between SQL event log plug-in and Postgres database
Java Jini	4160, 8000-8010	TCP, UDP	Responsible for discovery and communications between devices/services on iControl Solo network. Uses multicast in remote regions only, unicast and multi-unicast elsewhere.
Java RMI	32768–65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between Allégro-1 and Application Server. This range can be restricted to match specific security requirements. A minimum of 4000 ports should be allocated.
Java RMID	1098–1099	TCP, UDP	Remote Method Invocation Daemon to support client/server connections. Required for communication between Allégro-1 and Application Server.

From Remote Application Server to Local Application Server

Service	Port	Transport	Notes
Event log	5432	TCP	Communication between SQL event log plug-in and Postgres database
Java Jini	4160, 8000-8010	TCP, UDP	Responsible for discovery and communications between devices/services on iControl Solo network. Uses multicast in remote regions only, unicast and multi-unicast elsewhere.

(Continued)

Service	Port	Transport	Notes
Java RMI	32768–65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between client and Application Server/Allégro-1 applications. This range can be restricted to match specific security requirements. A minimum of 4000 ports should be allocated.
LDAP	389	TCP	Required for the iControl Solo Access Control/Authentication feature (user login).
rsync	873	TCP, UDP	Mirrors file systems for redundancy
SNMP Health Monitoring Agent	1161	UDP	Required for centralized Application Server Health Monitoring

From Application Server to Densité

Service	Port	Transport	Notes
Densité	5100, 5110	TCP	Required if Densité controller is installed. Recommendation is to isolate Densité on ETH1 for optimal performance. Can also be installed remotely to communicate with Application Server over WAN.

From Densité to Application Server

Service	Port	Transport	Notes
	None		Response is sent through the connection initiated by the Application Server.

Between Application Server and SNMP Devices

Service	Port	Transport	Notes
SNMP	161, 162	UDP	Simple Network Management Protocol, used for communications between iControl Solo and third party devices. Required for Application Server acting as an agent or a manager.
SNMP Health Monitoring Agent	1161	UDP	Required for centralized Application Server Health Monitoring

From Application Servers to IR Controller

Service	Port	Transport	Notes
IR Controller	4998	TCP, UDP	Used for set-top box control via infrared signal

Between Application Server and NTP Server

Service	Port	Transport	Notes
NTP	123	UDP	Used for Network Time Protocol synchronization, which is strongly recommended in a multiple Application Server configuration. Port needs to be open in both directions.

From Application Server to SMTP Server

Service	Port	Transport	Notes
SMTP	25	TCP	Simple Mail Transfer Protocol, for email alerts



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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