Configuration Manual

XS nano

Studio Production Server

EVS

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Improvement Requests

Your comments will help us improve the quality of the user documentation. Do not hesitate to send improvement requests, or report any error or inaccuracy on this user manual by e-mail to doc@evs.tv.

Regional Contacts

The address and phone number of the EVS headquarters are usually mentioned in the Help > About menu in the user interface.

You will find the full list of addresses and phone numbers of local offices either at the end of this user manual (for manuals on hardware products) or at the following page on the EVS website: http://www.evs.tv/contacts.

User Manuals on EVS Website

The latest version of the user manual, if any, and other user manuals on EVS products can be found on the EVS download center, on the following webpage: http://www.evs.tv/downloadcenter.

Table of Contents

What's New?

The changes linked to new features in version 11.1 are listed in the table below.

In the configuration manual, the icon has been added on the left margin to highlight information on new and updated features.

Click the section number in the table to jump directly to the corresponding section.

Section	Description
2.2.5	Import and export of configuration lines now supported from and to a local drive folder on the EVS server. Slight changes in the Import and Export windows.

In addition, the manual has been completed with information on functionality and configurations available on an XSnano server equipped with COHX boards.

The manual may also have been subject to slight changes unrelated to new features: these are not detailed in this section.

1. Introduction

1.1. Introduction to the Configuration of EVS Servers

New Configuration Module

The Multicam Setup application is used for configuration and maintenance operations on EVS video servers. It is also used to select which application to run, since EVS disk recorders have the ability to run various dedicated applications (Video Server, Slow Motion, …).

With the release of Multicam 11, a new configuration module has been implemented aiming at simplifying and clarifying the EVS server management and configuration tasks.
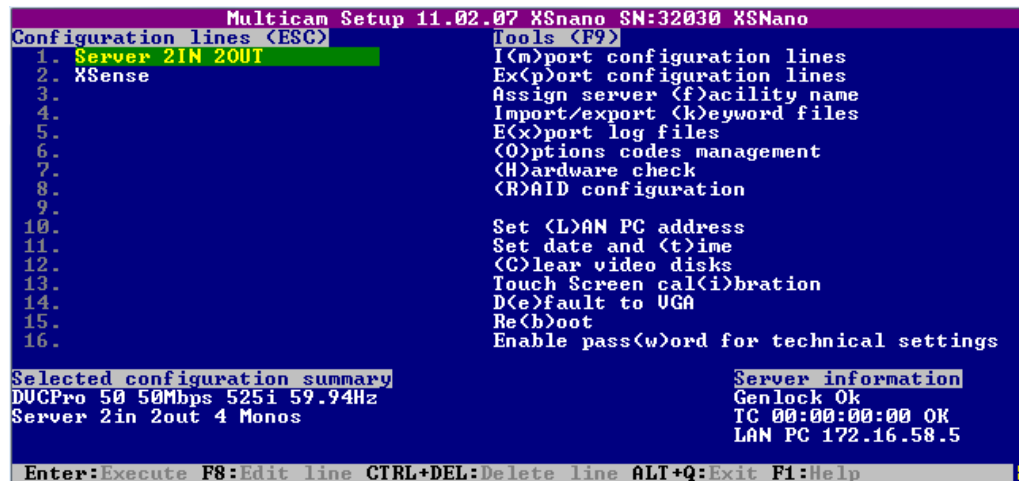
The new configuration module has been developed along the lines presented in this section.

Consolidation into a Single User Interface

The server can now be fully configured from a single user interface.

The user interface includes:

- a setup section presented on one page with two main areas which give access to the configuration lines and the most used maintenance commands:

- a configuration section for each configuration line. It is presented in seven tabs which easily give access to all configuration parameters:

```
                    CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                          1/1 Advanced Mode
Video and reference
Field rate            59.94Hz
Resolution            525i
Codec                 DVCPro 50
Bitrate (Mbps)        50
Recorded lines        480 lines (L23-262 ; L285-524)
LTC Timecode          00:00:00:00      OK
Sync PC Time to TC    No          every  00h15
Genlock               Blackburst       OK  Studio

Phase definition
SD                    0        Half Pixel (37ns ; -12000 -> 15000)

Interpolation
Vertical interp.      No
Four Lines            No

PC Lan
IP Address            172.016.058.005   Connected
Subnet Mask           255.255.000.000
Default Gateway       172.016.000.001
ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page        F1:Help
```

Simplification of the User Interface

The user interface has been simplified thanks to:

- the separation of basic and advanced parameters

  The most commonly used parameters are displayed in a basic mode while more specific parameters are hidden, and can be displayed when you toggle to the advanced mode.

- the filtering of the parameters displayed

  The parameters are only displayed when they are applicable to the chassis type, the video standard and option codes.

Parameter Changes While Server is Running

Changes to most parameters can now be performed and will be taken into account while the server is running.

Clarification of Audio Configurations

The audio configurations are more open and more easily configurable as it is possible to:

- modify the audio parameters while the server is running

- configure individual outputs for Embedded, Digital and Analog audio.

- configure audio monitoring settings directly from the Remote Control panel.

Configuration Available from Server, Web and Remote Panel

You can configure the EVS server using one of the three available tools:

- The server-based application (VGA) features all settings and commands for the setup and configuration.

- The newly designed web-based interface is equivalent to the server-based application and enables engineers to configure the EVS server remotely.

- The Remote Panel now includes:

  ◦ a technical setup menu that gives access to the most commonly used technical settings.

  ◦ an operational setup menu that only provides operational settings.

The following table gives an overview on the features available in each user interface:

	EVS Server Configuration		
	Setup Window	Configuration Window	
		Technical Settings	Operational Settings
Server-Based Application	Yes	Yes (tabs 1-6)	Yes (tab 7)
Web-Based Interface	Yes (except some Tools commands)	Yes (tabs 1-6)	Yes (tab 7)
Remote Panel	No	Yes (Technical Setup F0)	Yes (Setup Menu SHIFT+D)

1.2. Introduction to the Manual

Merging of Former Manuals

The XSnano server Configuration manual is the successor of the former Software Technical Reference manual and Multicam Configuration manual.

Both manuals have been merged into a single manual due to the in-depth reorganization of the software modules that allow configuring the EVS video servers. The Configuration manual is server-related.

Documented User Interfaces

The Server Configuration manual deals with all user interfaces used to configure Multicam: server-based application, web-based interface, and Remote Panel.

- On the one hand, the information on navigability and editing commands, specific to the user interface, is described in clearly separated sections.

- On the other hand, the reference information on and the description of configuration parameters are described in common sections valid for all user interfaces. A clear overview shows whether and where the parameters are available in each user interface.

Configuration Manual Structure

The Server Configuration manual is organized in two sections:

- A section dedicated to the Multicam Setup window that mainly features:
  - the configurations lines and their management
  - the functions related to server administration and maintenance.

- A section dedicated to the Multicam Configuration window, organized in seven tabs, which describes all server configuration parameters that can be defined for each configuration line. The section includes:
  - the parameter description itself
  - other server-related information needed for the configuration

1.3. Starting the EVS Server

Introduction

When switching on the EVS server, the first step is the PC boot sequence, followed by the boot of the video I/O boards, and finally the Multicam Setup application is started.

When Starting the EVS Server for the First Time

Before you first use your EVS server, you need to perform the following tasks:

- Define the configuration lines your EVS server should run.

  For more information, see section "Configuration Lines" on page 11.

- Define the configuration parameters for each configuration line you will need.

  In this step, you will define, among others, the channel configuration for the selected configuration line, as well as audio and video parameters for the EVS server.

  For more information, see section "Multicam Configuration" on page 42.

When Starting the EVS Server After Initial Configuration

After the initial configuration, you will select a configuration line and press **ENTER** to run the server in this configuration. See section "Launching a Configuration" on page 12. As soon as the EVS server is launched in a configuration, it starts the loop recording process.

1.4. Accessing the Web-Based Interface

Prerequisite

When the EVS server is started, you can access the web-based interface of the Multicam Setup application for that EVS server from any machine (PC or server) that is on the same network range as the EVS server. You can use any browser to open the web-based interface.

Procedure

To be able to open the web-based interface in a browser, you need to know the IP address of the PC LAN of the EVS server. See section "Setting the Server LAN PC Address" on page 25 for more information.

In your browser, enter the following URL: http://xxx.xxx.xxx.xxx/cfgweb/ where the crosses correspond to the PC LAN IP address of the EVS server you want to access.

2. Multicam Setup

2.1. Overview of User Interfaces

2.1.1. Overview of the Setup Areas

General Description

The Multicam Setup window is the window that opens first when the Multicam Setup application is launched. It is displayed when the EVS server is started but does not run a given configuration yet.

The Multicam Setup window allows users to:

- view and manage the various configuration lines.
- perform some administration and maintenance tasks on the EVS server.
- view summary information on the EVS server and the selected configuration line.

This is available in both server-based and web-based Multicam Setup applications.

Both user interfaces include the same features, except that the Tools menu offers fewer commands in the web-based user interface.

User Interfaces

The Multicam Setup window contains six areas highlighted and described below.

These areas contain similar information in both web-based and server-based applications:

The following screenshot presents the Multicam Setup window in the server-based application:
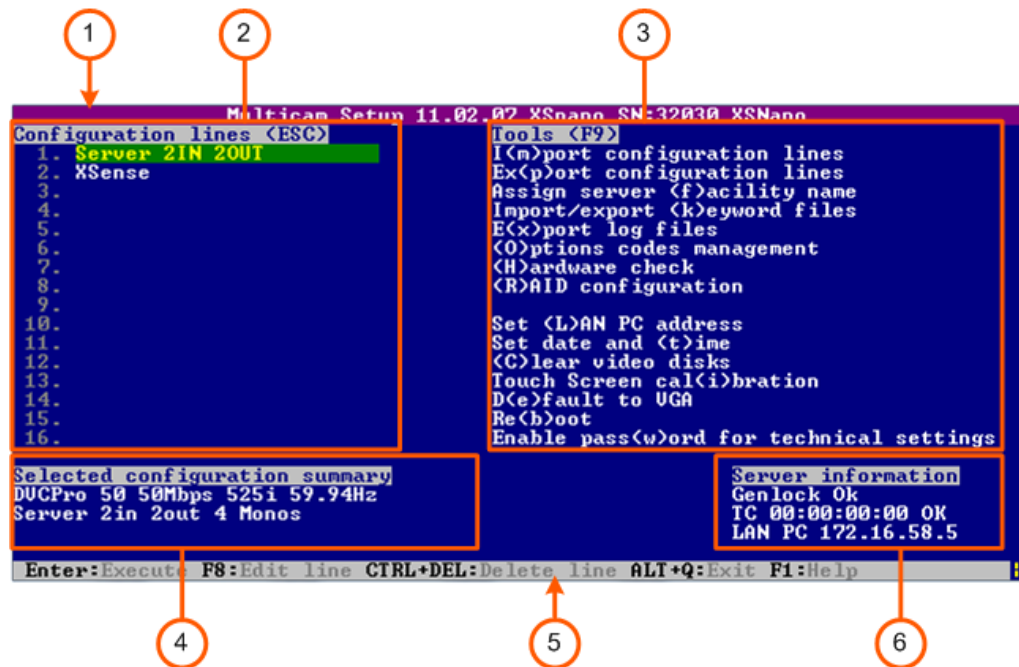
The following screenshot presents the Multicam Setup window in the web-based interface:
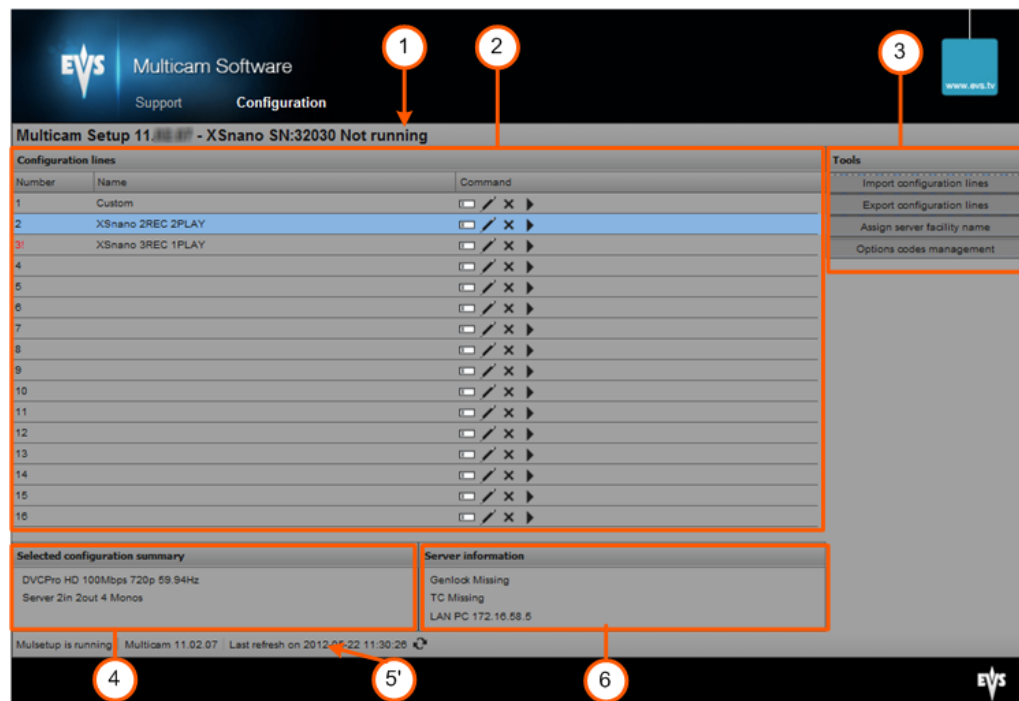
Description of the Areas

The table below describes the various parts of Multicam Setup window:

#	Name of area	Description
1.	**Title bar**	The title bar displays the following information: • Multicam version • server facility name (if any) • chassis type • server serial number
2.	**Configuration Lines**	This area shows all configurations the EVS server can run: • 16 configurations lines are available on an EVS server. A default configuration is defined behind all configuration lines, even if no name is assigned to the configuration line. • Each configuration line contains all configuration parameters, which allow a very flexible configuration of the EVS server. See section "Configuration Lines" on page 11 for more information.
3.	**Tools**	This area provides the main commands for server administration and maintenance. For more information, click the **Tools** command below to go to the dedicated sections in the Multicam Setup chapter: • Import/export configuration lines • Assign server facility name • Import/export keyword files (not applicable to this type of server) • Export log files • Options code management • Hardware check • Raid Configuration • Set LAN PC address • Set date and time • Clear video disks • Touch screen calibration (not applicable to this type of server) • Default to VGA • Reboot • Enable password for technical settings

#	Name of area	Description
4.	**Configuration Summary**	This area shows a summary of the server parameters for the configuration line selected in the Configuration Lines area. The summary displays the following information: 1. codec type - bitrate - video standard 2. based config - INs/OUTs - No. audios 3. server name - server type
5.	**Task bar**	The Task bar (Server-based application) displays commands for the main actions in the window. See section "Navigability and Commands" on page 9 for more information.
5'.	**Status bar**	The Status bar (web-based interface) displays: • the Multicam Setup application status • the date and time of the last refresh • the **Refresh** button
6.	**Server Information**	This area displays the following information on the EVS server: • genlock status (OK or bad) • timecode and timecode status (OK or bad) • IP address of the LAN PC

2.1.2.   Navigability and Commands

In the Server-Based Application

General Navigability

The following table presents the general commands to navigate in the Multicam Setup window:

Command description	Command key
Moving the cursor to the first item of the Tools menu	**F9**
Moving the cursor to the first configuration line	**ESC**
Moving down in the list of editable items (configuration lines and Tools commands)	**TAB**
Moving up in the list of editable items	**SHIFT**+**TAB**
Displaying a Help window that gives a summary of the commands	**F1**

Configuration Lines

In the Configuration Lines area, a configuration line is highlighted when it is selected.

The main commands for configuration line management are presented below:

Command description	Command key
Moving up in the list of configuration lines	**UP ARROW**
Moving down in the list of configuration lines	**DOWN ARROW**
Starting the server with a given configuration line	**ENTER** on selected line.
Entering the Configuration window to edit the settings related to a selected line	**F8**
Renaming a configuration line	**CTRL** + **F1**
Deleting a configuration line	**CTRL** + **DELETE**

See section "Configuration Lines" on page 11 for more commands on configuration lines.

Tools Menu

Command description	Command key
Selecting a tool command	Pressing the shortcut key (between brackets in the command name)
Calling a tool command	**ENTER** on the selected command

In the Web-Based Interface

> **Note**
>
> To be sure that changes have been taken into account in the web-based interface, refresh regularly the page by clicking the **Refresh** button ↻ in the status bar.

Configuration Lines

Command description	Command icon
Renaming the configuration line	
Entering the Configuration window to edit the settings related the configuration line	
Deleting the configuration line	
Starting the server with the corresponding configuration line	

Tools Menu

To call a Tools command, simply click on the command in the Tools menu. This will open the corresponding window.

2.2.   Configuration Lines

2.2.1.   Chapter Contents

The table below presents the topics of this section and shows whether the feature described is available from the web-based interface and/or from the server-based interface.

Section	Page	Server-Based	Web-Based
"Launching a Configuration"	2.2.2	Yes	Yes
"Editing a Configuration"	2.2.3	Yes	Yes
"Renaming Configuration Lines"	2.2.4	Yes	Yes
"Exporting and Importing Configuration Lines"	2.2.5	Yes	Yes (one by one)
"Changing the Position of Configuration Lines"	2.2.6	Yes	Yes (indirectly)
"Copying, Pasting and Deleting Configuration Lines"	2.2.7	Yes	Yes (indirectly)

2.2.2. Launching a Configuration

Introduction

When the EVS server has initialized, the Multicam Setup window stays open, by default, until the operator selects the requested configuration line and launches it.

How to Manually Launch a Configuration

In the Server-Based Application

To start a configuration in the server-based application, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Press **ENTER** to run the configuration line on the EVS server.

In the Web-Based Interface

To start a configuration in the web-based interface, click the **Launch** icon ▶ next to the configuration line you want to launch.

Automatic Launch

From the server-based application, it is possible to set the server so that the last used configuration line is automatically launched when the Multicam Setup window has stayed open for five seconds.

To activate the automatic launch, press **F7** on the requested configuration line in the Multicam Setup menu before launching this configuration. This configuration line is then highlighted in black (no longer in green) to indicate the automatic launch is active. The last used configuration line will then be launched automatically after a five seconds' delay the next time the EVS server will be restarted.

If you want to change the configuration line to be launched, you need to rapidly hit a key on the keyboard connected to the EVS server within five seconds after the Multicam Setup window has been displayed. Then, the Multicam Setup window will stay open and let you select another configuration.

2.2.3.   Editing a Configuration

How to Edit a Configuration

Introduction

When the operator hits a key on the keyboard connected to the EVS server (within five seconds if the automatic launch of a configuration is active), the Multicam Setup window stays open, and the operator can select and enter the selected configuration to edit it.

16 configurations lines are available on an EVS server. A default configuration is defined behind all configuration lines, even if no name is assigned to the configuration line.

Each configuration line contains all configuration parameters, which allow a very flexible configuration of the EVS server.

In the Server-Based Application

To edit a configuration line in the server-based application, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Press **F8**.

   The Configuration window opens. See section "Multicam Configuration" on page 42 to edit the configuration parameters.

3. When the configuration is defined for a given line, press **ALT+A** in the Configuration window to validate the changes

4. Press **ESC** to come back to the Setup window.

In the Web-Based Interface

To edit a configuration line in the web-based interface, proceed as follows:

1. Click the **Edit** icon ⬜ for the configuration line you want to configure.

   The Configuration window opens. See section "Multicam Configuration" on page 42 to edit the configuration parameters.

2. When the configuration is defined for the given line, click **Apply** to validate, and then **Quit** to come back to the Setup window.

Invalid Configuration

Invalid configuration lines are easily detected in the server-based application:

• When a configuration line becomes invalid, a red exclamation mark <!> is displayed next to the configuration line in both server-based and web-based interfaces:

 or

• When the operator presses **F8** to edit the configuration line in the server-based application, a popup window indicates the line is invalid. When the operator acknowledges the message, the pages including the invalid parameters are displayed with the invalid parameters selected.

2.2.4. Renaming Configuration Lines

Introduction

When the EVS server is delivered, default names are assigned to the configuration lines. You can change them as explained below.

In the Server-Based Application

To rename the configuration line in the server-based application, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Press **CTRL+F1**.

    The line if highlighted in pink and the cursor blinks on the first character.

3. Type the new name for the configuration line taking the following into account:

    ◦ The space bar allows you to delete the selected character.

    ◦ The **LEFT ARROW** and **RIGHT ARROW** keys allow you to move the cursor position on the line.

4. Press **ENTER** to validate the new name.

The new name is assigned to the configuration line and reflected in all user interfaces.

In the Web-Based Interface

To rename the configuration line in the web-based interface, proceed as follows:

1. Click the **Rename** button next to the configuration line you want to rename.

2. In the **Rename** dialog box, type the new configuration name.

3. Click **OK**.

The new name is assigned to the configuration line and reflected in all user interfaces.

2.2.5.   Exporting and Importing Configuration Lines

How to Export Configuration Lines

> **Note**
>
> The screenshots in this section features configuration names which are examples, and may not reflect configurations supported on your EVS server.

In the Server-Based Application

To export configuration lines from an EVS server in the server-based application, proceed as follows:

1. In the Multicam Setup window, press **P** to call the **Export Configuration Lines** command. The Export Configuration Lines window opens:

    ◦   The left pane allows the selection of the configuration lines to be exported

    ◦   The right pane allows the selection of the location where the export folder will be created on the USB key, or on the local drive folder `C:/LSMCE/DATA/SETUP/USER` or a subfolder.
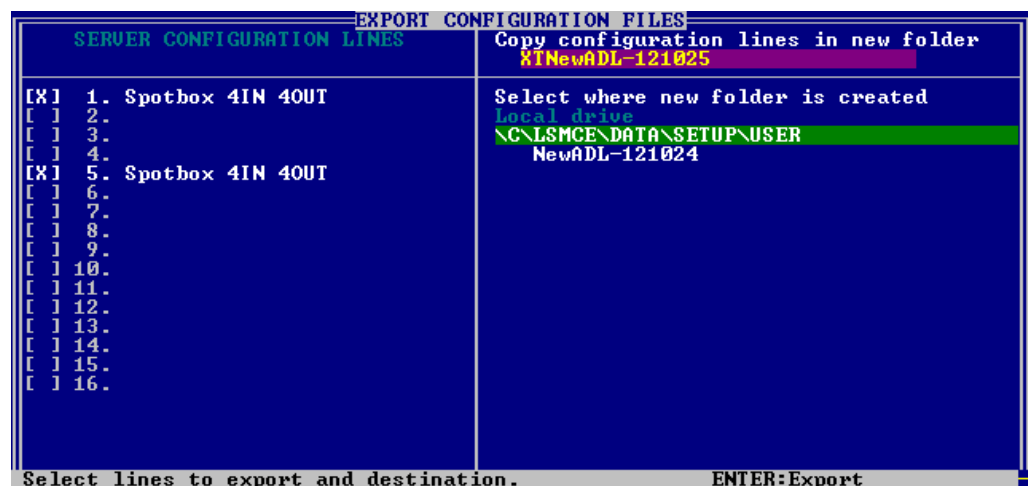
2. If requested, change the name of the folder the configuration lines will be exported to:

    ◦   By default, the folder name, displayed in the upper right corner, follows the pattern: <server facility name_current date> where the date has the YYMMDD format.

    ◦   To change the export folder name, type the requested name. You can do this any time in the procedure.

3. If requested, change the selection of configuration lines selected for export on the left pane:

   ◦ By default, a cross is displayed in front of all configuration lines, which means they are all selected for export.

   ◦ To deselect a line, use the **UP ARROW** or **DOWN ARROW** key to highlight the requested line, and press **SPACEBAR**. The cross is removed, and the deselected lines turn light gray.

4. Press **TAB** to shift the focus to the right pane.

5. If requested, change the location where the export folder will be created:

   ◦ By default, the export folder is created on the USB key root or on the local drive folder the local drive folder `C:/LSMCE/DATA/SETUP/USER`.

   ◦ To change the folder where the export folder will be created, highlight the requested folder. The last highlighted folder will be considered as the requested location.

6. To start the export process, press **ENTER**.

7. When the selected lines are exported (as a .lin file), a message opens to confirm the export. Click **OK** to acknowledge the message.

In the Web-Based Interface

> **Note**
> In the web-based interface, it is only possible to export configuration lines one by one.

To export configuration lines from an EVS server in the web-based interface, proceed as follows:

1. From the Multicam Setup window, click **Export configuration lines** in the Tools menu.

   The Export configuration lines window opens:

2. Click **Export** next to the configuration line you want to export.

3. In the File Download dialog box, click **Save**.

4. Select the location where you will save the export configuration file (.lin file) and, if requested, change the file name.

5. Click **Save**.

The export file is saved at the requested location.

If you want to export several configuration lines, repeat this operation for all requested configuration lines.

How to Import Configuration Lines

In the Server-Based Application

> ⚠️ **Warning**
> If the EVS server is password-protected, you should deactivate the password protection. Otherwise, you will only be able to import the operational settings of the configuration lines selected for import.

1. In the Multicam Setup window, press **M** to call the Import Configuration Lines command.

2. The Import Configuration Files window opens:

   ◦ The left pane allows the selection of the folder containing the configuration files to be imported.

   ◦ The right pane allows the selection of the configuration lines to be imported onto the EVS server.

```
╔══════════════════════IMPORT CONFIGURATION FILES══════════════════════╗
║ Local drive                               SERVER CONFIGURATION LINES  ║
║                                                                       ║
║ \C\LSMCE\DATA\SETUP\USER (0)             [X]  1. Spotbox 4IN 4OUT      ║
║    NewADL-121024 (2)                          2.                      ║
║                                               3.                      ║
║                                               4.                      ║
║                                          [X]  5. Spotbox 4IN 4OUT     ║
║                                               6.                      ║
║                                               7.                      ║
║                                               8.                      ║
║                                               9.                      ║
║                                              10.                      ║
║                                              11.                      ║
║                                              12.                      ║
║                                              13.                      ║
║                                              14.                      ║
║                                              15.                      ║
║                                              16.                      ║
║                                                                       ║
║                                                                       ║
║ Select a folder or a line to replace on the server.   ENTER:Replace   ║
╚═══════════════════════════════════════════════════════════════════════╝
```
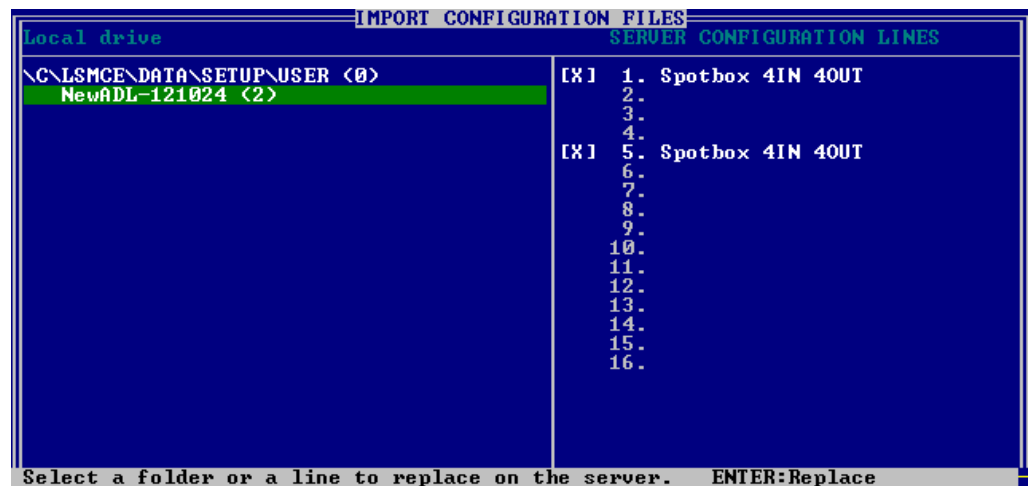
3. On the left pane, use the **UP ARROW** or **DOWN ARROW** key to highlight the folder that contains the configuration file you want to import.

   When the folder is selected, the right pane shows:

   ◦ a cross in front of the configuration lines that will be imported.

     The lines are imported onto the same position and with the same name as in the export file.

4. Press **TAB** to shift the focus to the right pane.

5. If requested, deselect lines you do not want to import:

   ◦ By default, all configuration lines present in the .lin file will be imported onto the EVS server.

   ◦ To deselect a line, use the **UP ARROW** or **DOWN ARROW** key to highlight the requested line, and press **SPACEBAR**. The deselected lines turn light gray and the cross is removed.

6. Press **ENTER** to validate the selection of configuration lines to import.

   A warning message informs you about which configuration lines will be imported, and tells the next screen will allow you to select which settings to replace.

7. Select 'Yes' using the **RIGHT ARROW**, and press **ENTER**.

8. In the Select settings to replace window, select the type of settings you want to import for the selected configuration lines:

   a. Press **SPACEBAR** to select or deselect a settings type.

   b. Press **TAB** to move to the next settings type.

   c. Repeat these steps for all settings types you want to import.

9. Press **ENTER** to start the import process.

In the Web-Based Interface

> **Note**
>
> In the web-based interface, it is only possible to import configuration lines one by one.

To import configuration lines onto an EVS server in the web-based interface, proceed as follows:

1. From the Multicam Setup window, click Import configuration lines in the Tools menu.

   The Import configuration line window opens.

   Import configuration lines ✕

   | R:\ADL\Screenshots\Cfg00001.lin | Select |

   Select the line to be replaced by the imported file

   - 1 : SPOTBOX IPDP 2REC 4 PLAY
   - 2 : LSM 4REC 2PLAY
   - 3 : LSM 1REC 2PLAY
   - 4 : LSM 2REC 2PLAY
   - 5 : LSM 2REC 4PLAY
   - 6 : LSM 3REC 1PLAY
   - 7 : LSM 3REC 2PLAY
   - 8 : LSM 3REC 3PLAY
   - 9 : LSM 4REC 2PLAY
   - 10 :
   - 11 : SLSM 1PLAY
   - 12 : SLSM 2PLAY
   - 13 : SLSM+1REC 2PLAY
   - 14 : SLSM+2REC 1PLAY
   - 15 :
   - ● 16 : SPOTBOX
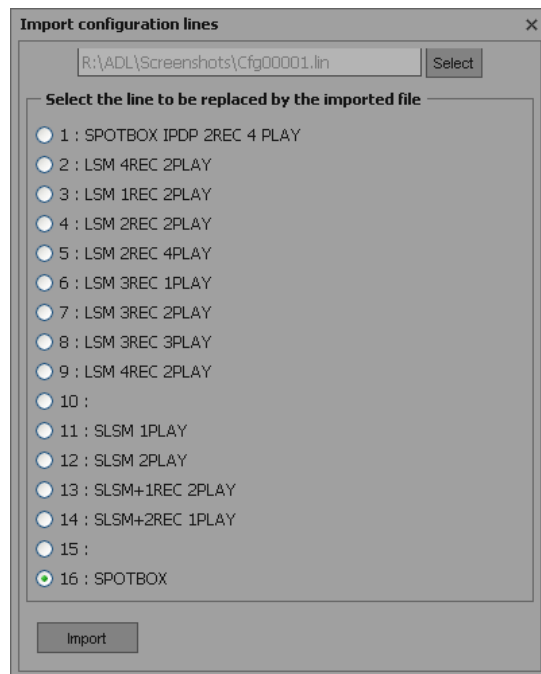
   Import

2. Click **Select** next to the top field and select the configuration file you want to import.

3. Tick the configuration line to be replaced on the EVS server.

4. Click **Import**.

The configuration line is imported with its original name onto the selected configuration line on the EVS server.

2.2.6. Changing the Position of Configuration Lines

In the Server-Based Application

To move a configuration line up in the list in the server-based application, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Do one of the following:

   ◦ To move the selected line up, press **CTRL** + **UP ARROW**.

   ◦ To move the selected line down, press **CTRL** + **DOWN ARROW**.

In the Web-Based Interface

The feature to move configuration lines up and down in the list of configuration lines is not available as such in the web-based interface.

You can however use the import and export feature to change the position of lines in the list of configuration lines.

2.2.7. Copying, Pasting and Deleting Configuration Lines

How to Copy/Paste Configuration Lines

In the Server-Based Application

> ⚠️ **Warning**
> Note that copying a line onto another position will erase the configuration on the selected position.

To copy and paste a configuration line in the server-based application, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Press **CTRL+C** to copy the line to the clipboard.

3. With the **UP ARROW** and **DOWN ARROW** keys, move to the position where you want to copy the line.

4. Press **CTRL** + **V** to paste the line to the selected position.

5. Press **ENTER** to confirm that you agree to replace the former configuration line by the one copied on the selected position.

In the Web-Based Interface

The feature to copy and paste configuration lines is not available as such in the web-based interface.

You can however use the import and export feature to change the position of lines in the list of configuration lines.

How to Delete Configuration Lines

> ⚠️ **Warning**
> When you delete a configuration line, the line will automatically be deleted, without prior warning message.

In the Server-Based Application

To delete a configuration line in the server-based application, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Press **CTRL**+**DEL** to delete the line.

The line is directly deleted.

In the Web-Based Interface

To delete a configuration line in the web-based interface, click the **Delete** icon ✖ next to the configuration line you want to delete.

The configuration line is directly deleted.

2.3. Server Parameters

2.3.1. Chapter Contents

The table below presents the topics of this section and shows whether the described features are available from the web-based interface and/or from the server-based interface.

Commands	Page	Server-Based	Web-Based
"Assigning a Server Facility Name"	2.3.2	Yes	Yes
"Activating and Deactivating the Password Protection"	2.3.3	Yes	No
"Setting the Server LAN PC Address"	2.3.4	Yes	No
"Setting the Server Date and Time"	2.3.5	Yes	No
"Setting the Default Output To VGA/Video"	2.3.6	Yes	No
"Configuring Server Raids"	2.3.7	Yes	No

2.3.2. Assigning a Server Facility Name

Introduction

You can assign a facility name to the EVS server. It allows the identification of the EVS server with a dedicated name, besides the server's serial number. This name is independent from any configuration.

The server facility name differs from the server net name, which can vary from a configuration to the other as it is defined in the configuration parameters.

The server facility name is displayed in the title bar of the Multicam setup and configuration windows, as well as on the OSD (on-screen display).

In the Server-Based Application

To assign a server facility name in the server-based application, proceed as follows:

1. In the Multicam Setup window, press **F** to call the **Assign server facility name** command. A dialog box opens:
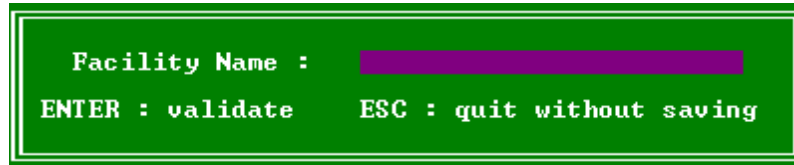
2. Type the server facility name and press **ENTER**.

The facility name is directly assigned and displayed in the Title bar, as well as on the OSD.

In the Web-Based Interface

To assign a server facility name in the web-based interface, proceed as follows:

1. From the Multicam Setup window, click **Assign server facility name** in the Tools menu. A dialog box opens:
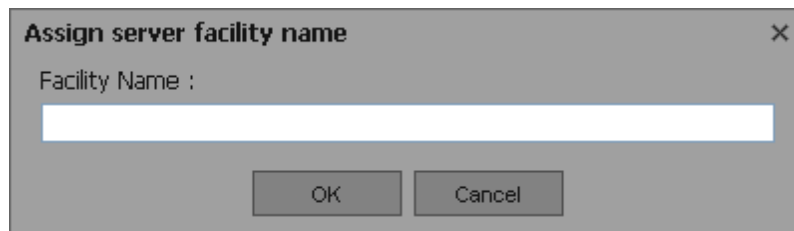
2. Type the server facility name and press **OK**.

The facility name is directly assigned and displayed in the Title bar, as well as on the OSD.

2.3.3.   Activating and Deactivating the Password Protection

Activating the Password on the EVS Server

Introduction

The administrator can protect the EVS server with a password. This password protection prevents unauthorized users from changing configuration settings. It does not prevent from using operational commands.

The password protection can only be activated and deactivated from the server-based application.

The password protection has the following impact on the various user interfaces:

- The password is required to apply changes to configuration parameters in the server-based application and in the web-based interface.

- On the Remote Panel, the Technical Setup menu is not available.

How to Activate the Password on the EVS Server

To activate a password on the EVS server, proceed as follows:

1. In the Multicam Setup window, press **W** to call the Enable password command. A warning message opens.

2. Read the warning message carefully. Press the **RIGHT ARROW** key to select 'Yes' and press **ENTER** to activate the password protection.

The password protection is directly active in all user interfaces, for all configuration parameters on all configuration lines.

Enabling Changes to Configuration Parameters

In the Server-Based Application

When the password protection is active, the following message is displayed in red at the top of each configuration tab in the Multicam Configuration window:
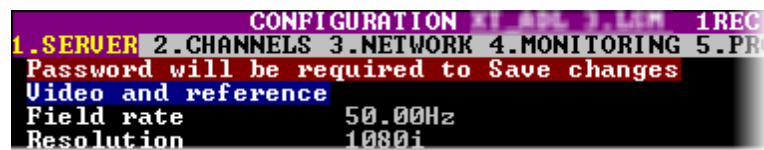
To enable changes in the configuration parameters during the session, you will be prompted for the password the first time you save changes to configuration parameters in a session.

In the Web-Based Interface

When the password protection is active, the Multicam Configuration window is completely dimmed and a closed lock icon is displayed at the top of the window:

To enable changes in configuration parameters during the browser session, proceed as follows:

1. Click the Lock icon .

2. Enter the password on the dialog box that is displayed.

3. Press **OK**.

The close lock icon changes to an open lock icon , and the parameters can be modified and saved for the browser session.

Deactivating the Password on the EVS Server

Once the password protection is active, it can only be deactivated from the server-based application as follows:

1. In the Multicam Setup window, press **W** to call the Enable password command.

    A message opens to warn you that you are about to remove the password protection:

2. Press the **RIGHT ARROW** key to select 'Yes' and press **ENTER**

3. Type the password in the dialog box that opens, and press **ENTER** to validate:

The password protection is directly removed from all user interfaces.

2.3.4.   Setting the Server LAN PC Address

Introduction

The MTPC board of an EVS server allows interaction with other EVS hardware on a setup via the LAN PC address. The port #1 of the MTPC board is used. The communication is established through telnet or FTP access. XNet Monitor will also use the LAN IP connection to transfer the monitoring data.

> **Note**
> You can only define the settings associated with the LAN PC address from the server-based application.

Settings
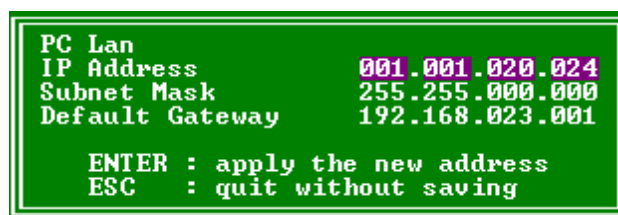
The MTPC board connection settings are described in the table below:

Setting	Description
IP Address	Specifies the IP address to connect to the port #1 of the MTPC board on the server. The IP addresses 0.0.0.0 and 255.255.255.255 are not allowed.
Subnet Mask	Specifies the range of logical addresses within the address space assigned to the MTPC board connection.
Default Gateway	Specifies the IP address of the router on the network that the MTPC board can use as an access point to external networks.

How to Set the LAN PC

To set up the LAN PC on the EVS server, proceed as follows:

1. In the Multicam Setup window, press **L** to call the **Set LAN PC address** command. The following window opens:

```
PC Lan
IP Address          001.001.020.024
Subnet Mask         255.255.000.000
Default Gateway     192.168.023.001

   ENTER : apply the new address
   ESC   : quit without saving
```

2. In this window, type the IP address, subnet mask, and default gateway. Use the **TAB** key to move from one field to the other.

3. Press **ENTER** to validate the definition of the LAN PC settings.

The LAN PC settings will automatically be taken into account when you launch a configuration line.

2.3.5.   Setting the Server Date and Time

Introduction

The **Set Date and Time** command allows you to adjust the system time & date from the Multicam Setup window in the server-based application. This is not available in the web-based interface.

> **Note**
> When you have just launched a configuration, a window displaying the system date and time gives you another opportunity to modify these parameters.

Supported Formats

The supported date format is DD-MM-YYYY, as shown in the example below:

•   15-03-2011 for March 15, 2011

The supported time format is hh:mm:ss, as shown in the example below

•   22:58:00 for 22 h 58 min 00 sec (24-hour display)

A warning message will inform you if the format you try to use is not valid.

How to Set the System Date and Time

To set up the system date and time from the Multicam Setup window, proceed as follows:

1.   In the Multicam Setup window, press **T** to call the System date and time command. The following window opens:

```
        System Date & Time

Date :  04/10/2011 (DD/MM/YYYY)
Time :  07:40:09

ENTER : apply
ESC   : quit without saving
```
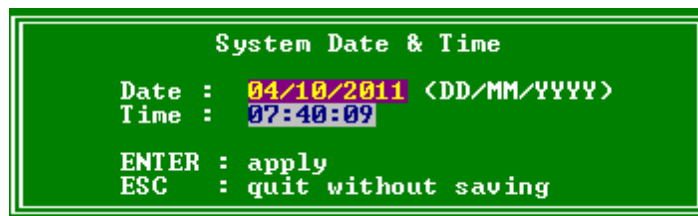
2.   In this window, type:

   ◦   the date in the DD/MM/YYYY format

   ◦   the time in the hh:mm:ss format (24-hour display)

   using **TAB** to move from one field to the other.

3.   Press **ENTER** to apply the changes to the system date and time.

The date and time you have entered here will automatically be taken into account when you launch a configuration.

2.3.6. Setting the Default Output To VGA/Video

Introduction

Between the PC boot and the I/O boot, the video driver is loaded. The **Default Output to VGA/Video** command allows you to switch the video display from and to one of the following modes:

- VGA mode

- B&W video mode. This mode sends a video CVBS output on the VGA connector, which allows the VGA screen to be displayed on a standard composite video monitor using the VGA <==> BNC adapter provided with the unit.

> **Note**
> When a configuration has been launched, you can still switch from one mode to the other with **ALT** + **BACKSPACE**.

How to Change the Default Output

Pressing **E** allows you to toggle from one mode to the other, and so changing the default output mode.

The parameter displayed on the Multicam Setup window corresponds to the active value. This means that when the parameter displayed is 'Default to VGA', the active mode is the VGA mode.

2.3.7. Configuring Server Raids

Introduction

When the EVS server is started, the server raids are automatically detected, and built based on the default settings described in the 'Default Raid Configuration' section below.

You can view the default raid configuration and modify it from the Raid Configuration window. This window is only available in the server-based application.

> **Note**
> Only hard disk drives from EVS can be used as they are specifically configured to work with EVS video servers.

Overview on the Raid Configuration Window

The Raid Configuration window is available from the Multicam Setup window, when pressing **R** to call the **Raid Configuration** command in the **Tools** menu:

```
RAID configurationlticam Setup 11.██.▲▼ ▓▓2▪     SN:26410 XT_ADL
─Requested configuration─
 Use Internal only
  1 (5+1) raids +  0 spare(s)


═Current configuration═
 Use Internal only
 RAID type                                    External Arrays Status
  1 (5+1) raids +  0 spare(s)                 EXT4
                                              EXT3
 RAID status                                  EXT2
 01 ── ── ── ── ── ── ── ── ── ── ── ── ── ── EXT1

 Disks status  Display raids     Highlight RAID 01
 EXT4 ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ──
 EXT3 ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ──
 EXT2 ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ──
 EXT1 ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ── ──
      ──
 INT2 ── ── ── ──
      01                01
 INT1 01 01 01 01       Legend OK Disconnected Rebuilding Spare Not present
<Tab>Edit                                                       <Esc>Quit
```

The Requested Configuration area, in the upper part of the window, displays the default raid configuration. You can modify the default raid configuration in this area. You will find more information on editable parameters below.

The Current Configuration area, in the lower part of the Raid Configuration window, provides raid and disk status information.

Default Raid Configuration

At the first start, the software builds the raids using the following settings:

• If internal and external storage are detected, both are used.

• (5+1) raid configuration with a maximum of 5 spares is used. First, all the raids are built. The remaining disks are used as spare disks. The construction of raids starts with internal arrays and carries on with external arrays. A raid can be created across several hardware arrays.

Requested Raid Configuration

Overview

In the Requested Raid Configuration, you can modify the following parameters in the default raid configuration:

• Use of internal and/or external storage.

• Use of spare disks.

• Number of raids to be used.

To modify one of these parameters, press **TAB** to select the requested field, and **SPACE BAR** to select the requested value, or type the requested value.

Field Description

The following table describes the fields editable in the Requested Configuration area in the Raid Configuration window. The fields are described in the sequence they appear. You can select them using the **TAB** key.

Field Name	Description
Storage type	Specifies which storage type you will use. When both storage types are available, the following values are possible: • Internal only • External + Internal • External only
Number of raids	Specifies the number of raids you want to use. Type the number of raids you want to use.
Raid configuration type	Specifies the raid configuration type. The software is able to handle two raid organizations: • (4+1): raid of 5 disks • (5+1): raid of 6 disks

Current Raid Configuration

This area is used to display the raid status for the selected configuration when the EVS server is running a configuration.

2.4. Licenses and Maintenance

2.4.1. Overview on Options Codes Management

Introduction

To run a software application and/or specific software options, not only the software itself is required but also a license key (called 'license code' in Multicam), which is unique for every option on every system.

This license keys can be temporary, be valid only until a defined deadline for demonstration purposes, or be permanent with no time limit.

The license keys are managed from the Options codes management window. This window is available in both the server-based application and the web-based interface.

> **Note**
> When a temporary license code will expire within the next two weeks or is expired, the system warns the operator when the Multicam Setup window opens.

Accessing the Options Codes Management Window

To open the Options codes management window in the server-based application, press **O** from the Multicam Setup window.

To open the Option codes management window in the web-based interface, click **Options code management** in the Tools menu from the Multicam Setup window.

2.4.2. Options Codes Management Window

In the Server-Based Application

The window features three areas which contain the information mentioned below:

Area	Description
Upper area	List of key settings related to the EVS server: • **System ID:** ID code of the hardware key, necessary for license code calculation. • **Serial number:** Serial number of the mainframe, also written on the back plate of the mainframe. • **User:** The user name is a label for information's sake only. • **Chassis type:** Type of mainframe. If this value is wrong, audio and video routing inside the system will not work properly. • **PSU type:** Type of PSU installed on the chassis: standard or hot swap. • **Key date and time:** Expiration date & time for temporary license codes. Not available when the permanent codes are installed.
Central area	All codes **available for the given server chassis**. Next to each code name, the code number, the type of license (permanent, temporary, demo, or 'not granted'), as well as the expiration date are mentioned.
Lower area	Area where you can enter new license codes manually. The commands on how to import new license code from files are specified.

In the Web-Based Interface

The window features two areas which contain the information mentioned below:
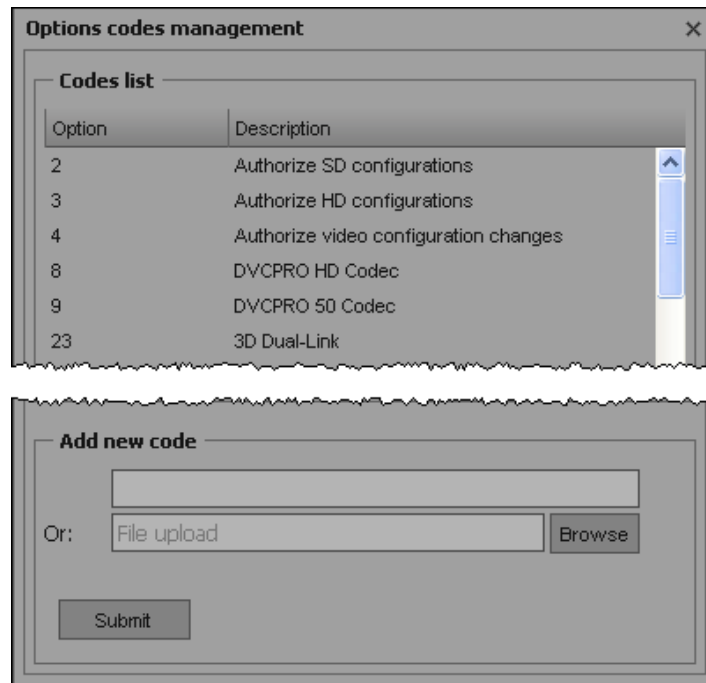
Area	Description
Central area	All codes **available for the given server chassis** for which a license key has been granted and is still valid. Next to each code name, the code number is mentioned.
Lower area	Area where you can enter new license codes manually or upload a license code file.

2.4.3. Entering and Removing License Codes

Introduction

When you request new license codes to activate one or more features, you can receive the license keys from EVS in the form of:

• a xxxxx.COD file (xxxxx = serial number of the server for which this file has been calculated). You need to apply this file to the EVS server from the Option codes management window.

• a license code that you can type in the Option codes management window.

Once the license codes have been entered, the corresponding options or features are automatically active when you launch a configuration, without having to reboot the server.

How to Enter License Codes from a COD File

In the Server-Based Application

To enter a new license code delivered via a COD file, proceed in one of the following ways:

1. Copy the .COD file on a USB key that you connect to the USB port of the EVS server.

2. From the Multicam Setup window, press **O** to open the Options codes management window.

3. Press simultaneously **ALT**+ **U** keys.

OR

1. Copy manually the .COD file to the C:\ drive of the EVS server.

2. In the Multicam Setup menu, press **O** to open the Options codes management window.

3. Press simultaneously **ALT**+ **F** keys.

The license codes will be read from the .COD file and updated into the system. Next to the line corresponding to the code, the license type, and the expiration date, if any, are displayed.

In the Web-Based Interface

To enter a new license code delivered via a COD file, proceed as follows:

1. Copy the .COD file onto a drive available from your PC.

2. From the Multicam Setup window, click **Options code management** in the Tools menu to open the Options code management window.

3. Click the **Browse** button, select the .COD file and click **Open**.

4. Click **Submit**.

The license codes will be read from the local file and updated into the system.

The lines corresponding to the new codes area added to the code list.

How to Enter License Codes with a Key Number

In the Server-Based Application

To enter a new license code delivered via a key number, proceed as follows:

1. From the Multicam Setup window, press **O** to open the Options codes management window.

2. Type the code you have received. It will automatically be typed in the Validation Code field:
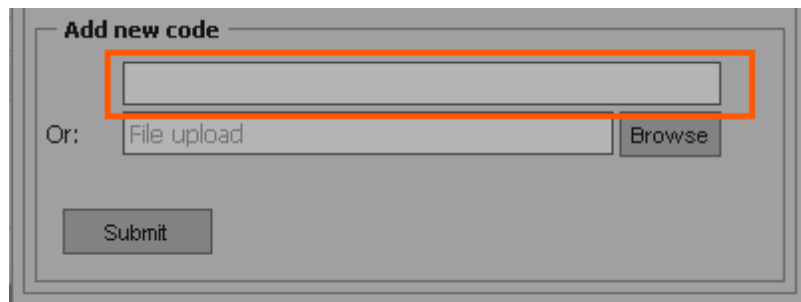
3.   Press **ENTER**.

Next to the line corresponding to the activated codes, the license type and the expiration date (if any) are displayed.

In the Web-Based Interface

To enter a new license code delivered via a key number, proceed as follows:

1.   From the Multicam Setup window, click **Options code management** in the Tools menu to open the Options code management window.

2.   Type the code number in the first field of the Add new code group box:

3.   Click **Submit**.

The lines corresponding to the new codes are added to the code list.

How to Remove a License Code

You can remove a license code from the server-based application. Proceed as follows:

1.   Press the **UP ARROW** and **DOWN ARROW** keys to move inside the options list and select the option to be removed.

2.   When the option is selected (highlighted in white), press simultaneously **CTRL**+ **DELETE** on the keyboard.

3.   Confirm the deletion of the option with **ENTER**.

2.5.   Server Maintenance

2.5.1.   Chapter Contents

The table below presents the topics of this section and shows whether the described features are available from the web-based interface and/or from the server-based interface.

Commands	Page	Server-Based	Web-Based
"Rebooting the EVS Server"	2.5.2	Yes	No
"Hardware Check"	2.5.3	Yes	No
"Clearing Video Disks"	2.5.4	Yes	No
"Exporting Log Files"	2.5.5	Yes	No

2.5.2.   Rebooting the EVS Server

To reboot the EVS server is not running in a given configuration, press **B** from the Multicam Setup window, then **RIGHT ARROW** and **ENTER** to validate the action.

To reboot the EVS server when it is running in a given configuration, press **ALT+Q** when you are in the Clip or Playlist page, then press **ENTER** to confirm the action.

2.5.3.   Hardware Check

Overview on the Hardware Check

Purpose

During the hardware check, the following actions are performed:

• Retrieving and checking relevant information related to the various boards installed on the EVS server

• Verifying the validity of the data recorded on the video disk array

The hardware check is only available in the server-based application.

> **Tip**
> Hardware check is also used to rebuild the video and audio information after replacing a faulty disk.

Process

The hardware check runs the same steps and checks as the server boot process :

1. MTPC check

2. H3X or HCTX check

3. Video Codec check

4. Quad booting

5. GigE download

6. Disk check

7. Data loading

After you have launched the hardware check by pressing **H** in the Multicam Setup window, the system automatically starts the test process.

One after the other, the various steps are displayed in the BOOT.H3X or BOOT.HCTX window. The test process is completed when the H3X or HCTX board is initialized.

At the end of the hardware check, the hardware revisions information is displayed. The information is logged in the `bootwins.log`.

Disk Errors and Disconnection

Disconnection

When one disk of the video raid array has sustained errors, Multicam automatically disconnects that disk and uses the parity disk to rebuild the missing data and provide the video and audio data blocks to the application. The operator can thus continue working normally and the message "!Raid" appears on all monitoring outputs.

A message is displayed each time a disk is disconnected:

*   if the faulty disk is a spare disk:

```
 "Warning: a spare disk has been disconnected. The system will
          operate normally on the remaining disks.
                   At the next opportunity
please consider replacing the faulty disk. It can be identified
in the Shift-F5 screen or in the EVS - RAID configuration menu.
                   [Enter]=Continue"
```

*   if the faulty disk is contained in a RAID:

```
"Warning: a disk has been disconnected. The system will operate
    normally on the remaining disks. At the next opportunity
please consider replacing the faulty disk. It can be identified
in the Shift-F5 screen or in the EVS - RAID configuration menu.
                   [Enter]=Continue"
```

Exit

When exiting Multicam, a warning will appear to remind the operator that one disk was disconnected, and invite him to perform a hardware check to repair the video raid. This is displayed even if a spare disk is available:

• if the faulty disk is a spare disk:

```
   "Warning: a spare disk has been disconnected. At the next
opportunity please consider replacing the faulty disk. It can
   be identified in the Shift-F5 screen or in the EVS - RAID
            configuration menu. [Enter]=Continue"
```

• if the faulty disk is contained in a RAID:

```
"Warning: a disk has been disconnected. At the next opportunity
please consider replacing the faulty disk. It can be identified
in the Shift-F5 screen or in the EVS - RAID configuration menu.
                   [Enter]=Continue"
```

Restarting

If Multicam is restarted without the RAID being rebuilt, a message similar to the following one, and adapted to the disk type, is displayed during the bootwins:

• if a spare disk is OK:

```
[ Bad ] SEAGATE ST9300603SS   3SE10H1J   0006   279GB 02 07
```

• if no spare disk is OK and the RAID is no more complete:

```
[ Bad ] SEAGATE ST9300603SS   3SE10H1J   0006   279GB 02 07

WARNING !!! Tray XX is missing 1 disk(s) to be complete
```

Then when entering Multicam, another message appears, even if a spare disk is available:

• if the faulty disk is a spare disk:

```
 "Warning: a spare disk has been disconnected. The system will
     operate normally on the remaining disks. At the next
opportunity please consider replacing the faulty disk. It can
  be identified in the Shift-F5 screen or in the EVS - RAID
            configuration menu. [Enter]=Continue"
```

• if the faulty disk is contained in a RAID:

```
"Warning: a disk has been disconnected. The system will operate
normally on the remaining disks. At the next opportunity please
consider replacing the faulty disk. It can be identified in the
    Shift-F5 screen or in the EVS - RAID configuration menu.
                     [Enter]=Continue"
```

The operator can press **ENTER** and operate normally on 4 disks (configuration "4+1") or on 5 disks (configuration "5+1") or exit the software and return to Multicam Setup window to run a hardware check.

Retrieving Logs

If you suspect that the drive disconnection in operation was not due to a severe disk failure, but perhaps to the server being too prompt to disconnect a drive, you must run a hardware check immediately after ending the session during which the disk was disconnected.

Don't rebuild the RAID, but press simultaneously the **ALT+L** keys to generate the log file `C:\LSMCE\DATA\LOG\SCSI.LOG,` and send this file to EVS for detailed analysis. Note that this procedure is only valid if the drive is disconnected during operation, not for a drive being disconnected when booting the system.

Rebuild Process

Introduction

The XSnano server is capable of performing a rebuild process of the RAID. This process can happen either while the Multicam application is not running (offline process – rebuild is faster) or while the Multicam application is running (online process – rebuild is slower).

Disconnection Process

As explained in the section "Disk Errors and Disconnection" on page 37, the software will disconnect a disk that does not behave as expected.

Two options are available for the operator:

- Replace the disconnected disk and restart the server

  ○ Start the Multicam application. The rebuild process will start automatically.

  ○ Start a hardware check from the EVS menu and launch the rebuild. The process starts offline. The operator can wait for the rebuild to be completed or cancel it (that is to say postpone it) and start the Multicam application, in which case the rebuild carries on in online mode.

- The operator can also force the disk to be reconnected by starting the rebuild process in the hardware check. The process starts offline. The operator can wait for the rebuild to be completed or cancel it and start the Multicam application, in which case the rebuild carries on in online mode.

> **Note**
> If errors are detected during the rebuild process, a message appears after the rebuild is complete to warn the operator, and the raid is not considered as properly rebuilt. In this state, the system will keep working on 4 disks (4+1 configuration) or on 5 disks (5+1 configuration). If you want to run on 5, or 6, disks again, you can try replacing the disk again and perform another rebuild, or clear all clips.

If you don't need to retrieve the clips or the record trains, you don't need to rebuild the RAID. In this case, select the 'Clear All Clips' answer when the message with this option appears in the hardware check.

If you don't rebuild the RAID array or if you don't clear clips, the EVS server will keep running on 4, or 5, disks only, and you will see a warning message appearing every time you start or close the Multicam application. Normal operation can be achieved on 4, or 5, disks, but then, if another disk fails, the system will hang and all video and audio data will be definitively lost.

> **Warning**
> By default, the online rebuild process takes up 10% of the disk bandwidth. If you want to change this, contact EVS support.

2.5.4.   Clearing Video Disks

Introduction

This function is used to delete all media from the RAID disk array. This will permanently delete all video and audio data, including protected clip and record trains.

Procedure

To clear video disks, proceed as follows:

1. In the Multicam Setup window, press **C** to call the **Clear Video Disks** command.

2. Press **RIGHT ARROW**, and **ENTER** to select **Yes** and validate the deletion

   OR

   Press **ENTER** to cancel the deletion.

> **Note**
> After a Clear Video Disks action, the command toggles to **Undo Clear Video Disks At Next Start** as long as your server has not been rebooted after the **Clear Video Disks** command. This allows you to restore the deleted media.

2.5.5.   Exporting Log Files

When the EVS support team requests the log files to investigate an issue, you can export the log files to a plugged-in USB key by pressing the **X** shortcut key from the Multicam Setup window.

When you call the **Export log file** command, a .zip file is created on the root folder the USB key. It contains:

* all files and folders located on `C:\LSMCE\DATA` folder of the EVS server

* an Excel spreadsheet that contains the definition of your configuration lines

After the export action, a message box asks you whether you want to delete the logs on the EVS server. If you answer 'Yes', the content of the folders `C:\LSMCE\DATA\LOG` and `C:\LSMCE\DATA\DUMP` are deleted.

You can also export log files from XNet Monitor. For more information, refer to the XNet Monitor user manual.

3.   Multicam Configuration

3.1.   Overview on User Interfaces

3.1.1.   Introduction

Preliminary Remarks

Configuration as Initial Step

Prior to using Multicam, the operator should set all necessary parameters in the Multicam Configuration window. If clips are stored with certain parameters and the operator wishes to change the parameter values afterwards, those clips and playlists will not change.

Configuration with Caution

Most parameters are factory preset, and should not be modified without advice of qualified EVS staff. Improper values for some parameters will prevent the proper operation of the system.

Parameter Availability

Only the parameters or parameter values valid for the given server type, server chassis, and active license codes are available for defining the various configurations.

General Comparison Between User Interfaces

You can configure the EVS server using one of the three available user interfaces:

- Multicam Configuration window in the server-based application
- Multicam Configuration window in the web-based interface
- Technical and Operational Setup menus in an EVS Remote Panel (if any)

The Multicam Configuration windows in the server-based and web-based interface are almost identical.

In the Remote Panel, however, only the most used technical settings are available in the Technical Setup menu, and all operational settings are available in the Operational Setup menu.

The following table provides an overview on the features available in each user interface:

	Configuration Window	
	Technical Settings	**Operational Settings**
Server-Based Application	Yes (tabs 1-6)	Yes (tab 7)
Web-Based interface	Yes (tabs 1-6)	Yes (tab 7)
Remote Panel	Yes (partly) (Technical Setup: F0)	Yes (Setup Menu: SHIFT+D)

Overview on Configuration Parameters

The first topic of each section in the Multicam Configuration chapter gives you an overview on the parameters available in this section, and specifies whether you will find the parameter:

- in the basic or advanced view in the server-based application and the web-based interface

- in the Technical Setup, Operational Setup, or not at all on the Remote Control panel

The following list provides a hyperlink to all overview topics in the various sections:

- Server settings

- Channels settings

- Network settings

- Monitoring settings

- Protocol settings

- GPI settings

- Operations settings

Concurrent Modifications in the Remote Panel and the Server-Based Application

When a parameter is modified with the Remote Panel, and that parameter is not in conflict with the parameter modified in the Configuration page of the server-based application, the following message will be displayed on the VGA.

```
'The configuration has been modified by another user without
      any conflict. Your copy has been updated with these
                          modifications.'
```

When a parameter is modified with the Remote Panel, and the parameter is in conflict with the parameter modified in the Configuration page of the server-based application, the following message shall be displayed on the VGA or on the LCD display of the Remote Panel. The configuration shall be updated if the user agrees.

```
'The configuration has been modified by another user.
      Do you want to load it and lose your modification?'
```

⚠ **Warning**

When this message is displayed on the Remote Panel and the user answers 'No' to the message (**Clear** button), the modifications performed on the Remote Panel will be preserved. The changes applied on the VGA will however be loaded after the user leaves the operational setup menu, except if the specific fields modified on the VGA have been modified and validated on the Remote Panel after the message display.

3.1.2. Overview of the Multicam Configuration Window

Introduction

In the server-based and web-based interfaces, all server settings related to each configuration file are grouped in a single window: the Multicam Configuration window.

When the server is not running a given configuration, the Multicam Configuration window allows you to define any of the configurations available in the Multicam Setup window.

When the server is running a given configuration, the Multicam Configuration window allows you to modify the settings of the running configuration.

The Multicam Configuration window is organized in a similar way in both user interfaces:

• It consists of seven tabs.

• Each tab contains one or more pages in the server-based application.

• Each tab displays all settings on a single page in the web-based interface.

• The settings on page/tab are organized in field groups having a dedicated name.

Accessing the Multicam Configuration Window

In the Server-Based Application

To access the Multicam Configuration window from the Multicam Setup window when the server is not running, proceed as follows:

1. Press the **UP ARROW** or **DOWN ARROW** key to respectively move up and down in the list of configuration lines until the requested line is highlighted.

2. Press **F8**.

   The Multicam Configuration window opens.

To access the Multicam Configuration window from the Clips or Playlist window when the server is running, press **SHIFT+F2**.

In the Web-Based Interface

To access the Multicam Configuration window from the Multicam Setup window when the server is not running, click the **Edit** icon ✎ for the configuration line you want to configure. The Multicam Configuration window opens.

The Multicam Configuration window will directly be displayed on the web-based interface when the server is running a given configuration. You will directly be able to edit the settings for the running configuration.

Display Mode

The settings in the Multicam Configuration window have been categorized as basic or advanced settings depending on whether they are commonly used or not.
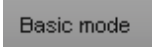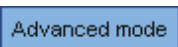
Two display modes are consequently available:

- Basic mode

- Advanced mode

Selecting the basic mode will hide settings on some pages, or completely hide other pages.

To change the display mode in the server-based application, press **F3**.

To change the display mode in the web-based interface, click on the display mode label

 or .

User Interfaces

Server-Based User Interface

The following screenshot presents the 1st tab, and 1st page of the Multicam Configuration window in the server-based application, shown in advanced mode:

- The title bar displays the selected configuration, and specifies whether the configuration has been launched (running) or not (not running).

- The selected tab is highlighted in pink.

- The current page and number of pages in the tab are specified in the top right corner.

- The display mode (basic or advanced) is specified in the top right corner.

```
                    CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                            1/1 Advanced Mode
Video and reference
Field rate              59.94Hz
Resolution              525i
Codec                   DVCPro 50
Bitrate (Mbps)          50
Recorded lines          480 lines (L23-262 ; L285-524)
LTC Timecode            00:00:00:00      OK
Sync PC Time to TC      No           every   00h15
Genlock                 Blackburst       OK   Studio

Phase definition
SD                      0           Half Pixel (37ns ; -12000 -> 15000)

Interpolation
Vertical interp.        No
Four Lines              No

PC Lan
IP Address              172.016.058.005  Connected
Subnet Mask             255.255.000.000
Default Gateway         172.016.000.001
ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page        F1:Help
```

Web-Based User Interface

The following screenshot presents the 1st tab of the Multicam Configuration window of an XSnano server in the web-based interface, shown in advanced mode:

- The top line displays the name of the selected configuration, and specifies whether the configuration has been launched (running) or not (not running).

- The selected tab is displayed in a lighter gray color.

- The Display mode (basic or advanced) is specified on the top line.
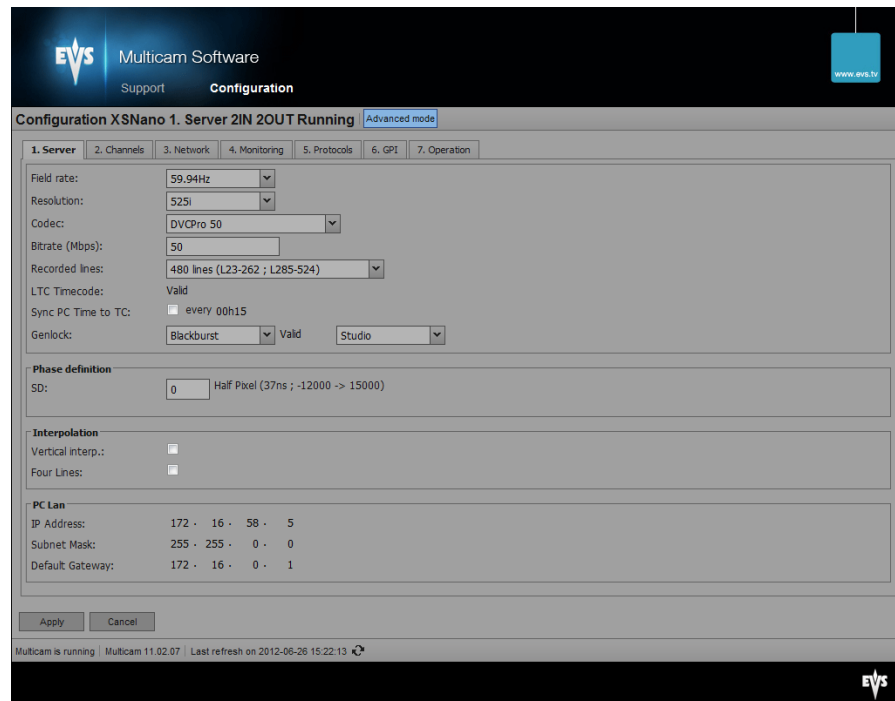
3.1.3. Navigating and Editing in the Multicam Configuration Window

In the Server-Based Application

Navigation Commands

The following table presents the commands to navigate in the Multicam Configuration window:

Command description	Command key
Selecting a given tab	**CTRL** + tab number
Moving from one tab to the other (when the tab is selected, i.e. rose highlighted)	**LEFT ARROW / RIGHT ARROW**
Moving down/up in the pages of the active tab	**PAGE DOWN** or **PAGE UP**
Moving down in the list of editable settings	**TAB**
Moving up in the list of editable settings	**SHIFT + TAB**
Toggling between Basic and Advanced display mode	**F3**

Editing Commands

The following table presents the commands to edit the configuration settings in the Multicam Configuration window when the field has been selected (using the **TAB** key).

In text fields, you can directly type the requested value for a selected field.

Command description	Command key
Increasing the value (or displaying the next value in the list)	**SPACEBAR**
Decreasing the value (or displaying the previous value in the list)	**SHIFT+SPACEBAR**
Moving the cursor position within a text field	**SHIFT+ RIGHT ARROW / LEFT ARROW**
Resetting the value of the selected setting	**F5**
Resetting **all** values of **all** settings in the **current** tab for the selected configuration	**CTRL+F5**
Resetting all values of **all** settings in **all** tabs for the selected configuration	**CTRL+SHIFT+F5**
Applying changes	**ALT+A**
Leaving without applying changes	**ESC**, **ENTER**

Enabling Values in a List

For some settings, you need to enable values in a list of displayed values. This is, for example, the case with the selection of pages (receive pages, protect pages) in the Operation tab.

The enabled pages are highlighted in blue, and the disabled pages are not highlighted.
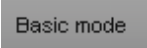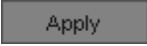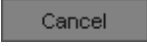
To enable a list of values for a given setting, proceed as follows:

1. Select the list of values with the **TAB** key.

   Once the list of values is selected, the enabled values stay highlighted in blue, and the disabled values are highlighted in pink.

2. On the keyboard, type the page numbers you want to enable. They become highlighted in blue.

3. Apply the changes with **ALT+A**, and confirm the action.

In the Web-Based Interface

Navigation and Editing Commands

The navigation and editing commands in the web-based interface are the commonly used commands in a web-based interface. The command buttons available are the following ones:

Command description	Command key
Activating the Advanced display mode	Basic mode
Coming back to the Basic display mode	Advanced mode
Applying changes	Apply
Canceling changes	Cancel

In Server- and Web-Based Interfaces

Display and Checks of Modified Values

Once modified, the field values are displayed in blue color as long as the changes have not been applied. No check on inconsistent or incompatible field values are performed at that stage.

When you apply the changes, the following occurs:

• The values you have modified are checked. If setting values are inconsistent, you will get an error message at that stage.

• The validated values return to the standard color.

• The inconsistencies are displayed as follows:

   ◦ Inconsistent values are displayed in red.

   ◦ A warning message tells you which field value is problematic.

   ◦ The page containing the inconsistent field value is then displayed when you use the server-based application.

Required Application Reboot

Modifications to some parameters will only be applied after an application reboot. This is mentioned in the sections where the parameters are described. These parameters are summarized below:

Tab Name	Setting Name
Server tab	Most video and reference settings: • Field rate • Resolution • Codec • Bitrate • Horizontal res. • LTC timecode
Server tab	All PC LAN settings (only editable from the Multicam Setup window)
Channels tab	Some base settings: • Inputs • Outputs • Base config
Channels tab	One audio setting: • Number of tracks
Channels tab	One recorder setting: • Loop % (in IN1 XX% Loop field)
Network tab	All Gigabit Ethernet settings: • IP address • Subnet mask • Default gateway
Monitoring tab	One setting in the Downconverted Outputs area: • Aspect ratio

3.1.4. Overview of the Setup Menus in the Remote Panel

Introduction

When you work in XSense mode, the Technical and Operational Setup menus available on the Remote Panel allow you to define:

• the commonly used technical settings in the Technical Setup menu

• all operational settings in the Operational Setup menu.

The values assigned to the settings are saved as soon as they are modified.

Accessing the Technical Setup Menu

To access the Technical Setup menu, press **F0** from the Main Setup page.

The Technical Setup menu opens on the 1st page.

The Technical Setup menu is divided in sections and subsections, named by Tx.y where x is the section number, and y the subsection number.

In all sections dedicated to a tab of the Multicam Configuration window in this manual, you will find an overview table that lists the settings available in the Technical Setup menu, as well as the sections where you will find them.

> **Note**
> The Setup menu of the Remote Panel is dynamically adapted based on the EVS server configuration and valid license codes. Consequently, the settings available on the Remote Panel do not have a fixed position in the Setup menu.

Accessing the Operational Setup Menu

To access the Operational Setup menu, proceed as follows:

1. If you are in Playlist mode, press **RECORD** first to exit this mode.

2. Press **SHIFT** + **MENU** to go to the Main menu:

			Setup
1PGM+PRV	2/3 PGM		

3. Select Setup by pressing **SHIFT + D** to enter the Operational Setup menu.

The Operational Setup menu is divided in sections and subsections, named by x.y where x is the section number, and y the subsection number.

3.1.5.   Navigating and Editing in the Setup Menus of the Remote Panel

Introduction

The way you navigate and edit settings is identical in the Technical Setup menu and Operational Setup menu. The navigation and editing commands are explained below.

Navigation Commands

The following table presents the commands to navigate in the Setup menus of the Remote Panel:

Command description	Command key
Moving to another section when you are inside a section	**SHIFT+F_** key corresponding to the section
Moving to the next page inside a section When you are on the last page of a section, you will go to the 1st page of the next section.	**F10**
Moving to the previous page inside a section When you are on the first page of a section, you will go to the last page of the previous section.	**F9**
Exiting the Setup menu	**Menu**
Scrolling through section pages with the jog wheel	**ENTER** (when no setting is selected) + jog

Editing Commands

The following table presents the commands to edit a setting in the Setup menus of the Remote Panel:

Command description	Command key
Selecting a setting in a section	**F_** key corresponding to the requested setting
Modifying the setting value	Turn the jog wheel
Validating the modification to a setting value	**ENTER**
Restoring the default value for the selected setting	**CLEAR + F_** key corresponding to the requested setting
Restoring the default values on the entire Setup menu	**CLEAR + F0**
Validating the changes in the Setup menu (to answer to the message when you try to leave the menu)	**MENU**
Cancelling the changes in the Setup menu (to answer to the message when you try to leave the menu)	**CLEAR**
Staying in the Setup menu (to answer to the message when you try to leave the menu)	**ENTER**

3.2.   Supported Configurations

3.2.1.   General Information on Supported Configurations

Overview on Supported Configuration Types

An XSnano server, equipped with V3X boards, supports the following configurations types:

- standard SD/HD configurations

- 3D configurations

An XSnano server, equipped with COHX boards, supports the following configurations types:

- standard SD/HD configurations

> **Note**
> The features 'Mix on one channel' for play channels and 'Two recorders per codec module' for record channels are not available.

Number of Record and Play Channels

The number of record and play channels for a given configuration is defined in the Channels tab, in the Base settings. See section "Base Settings" on page 71.

This section presents the number of channels available on the XSnano server, equipped with V3X or COHX boards. The following table shows the minimum and maximum number of play and record channels that can be operated:

Max. # channels	4
Min. # REC	0
Max. # REC	4
Min. # PLAY	0
Max. # PLAY	4

Channel Assignment

The following general principles apply to all configurations, and are valid for all EVS servers equipped with V3X or COHX boards:

- The record channels (IN connectors) are always assigned from the right to the left.
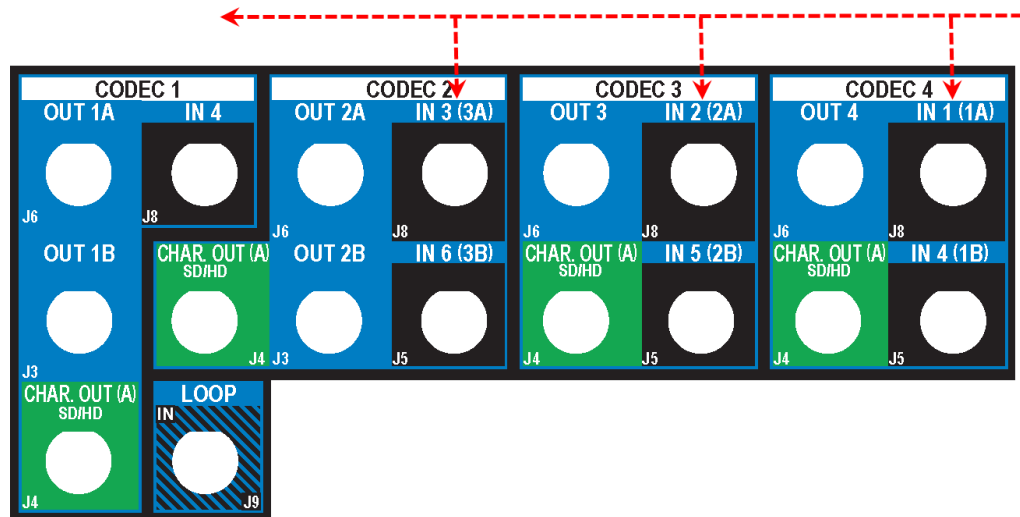
- The play channels (OUT connectors) are always assigned from the left to the right.
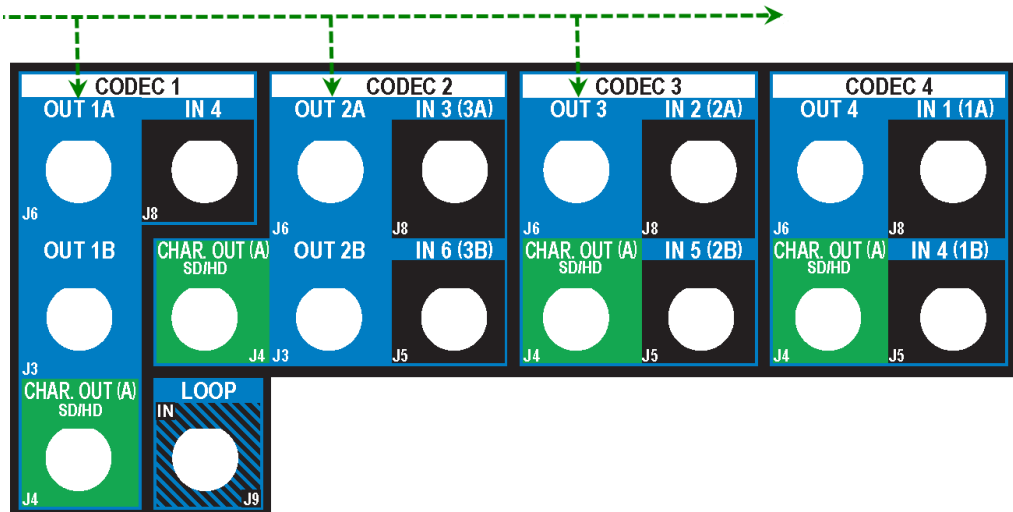
The following principles apply to EVS servers equipped with V3X boards:

- The primary links of the V3X boards mentioned in the tables of this section correspond to the upper connectors of a codec module.

    ◦ J8 for IN connectors

    ◦ J6 for OUT connectors
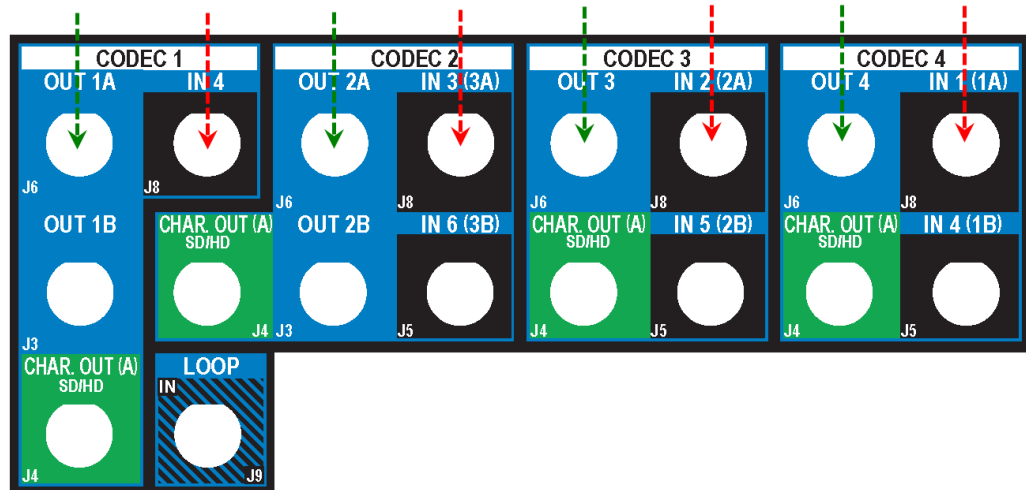
- The secondary links of the V3X boards correspond to the middle connectors of a codec module:

    ◦ J5 for IN connectors (only IN 1B to 3B)

    ◦ J3 for OUT connectors (only OUT 1B and 2B)
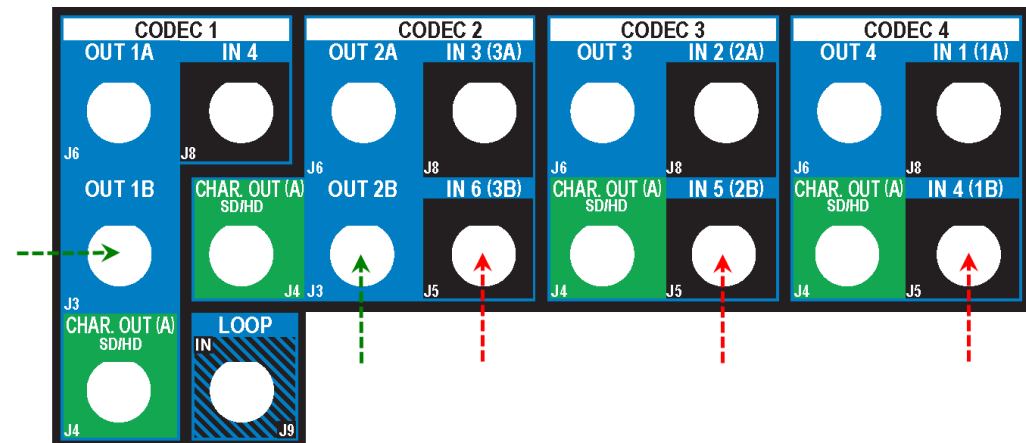
3.2.2.   SD/HD Base Configurations

Introduction

The table below shows the available standard SD/HD configurations with an XSnano server (with COHX or V3X boards), and how the BNC connectors should be cabled.

Available Configurations

#REC	#PLAY	IN4/OUT1		IN3/OUT2		IN2/OUT3		IN1/OUT4	
		Prim. Link	Sec. Link	Prim. Link	Sec. Link	Prim. Link	Sec. Link	Prim. Link	Sec. Link
1	0							REC1	
2	0					REC2		REC1	
3	0			REC3		REC2		REC1	
4	0	REC4		REC3		REC2		REC1	
0	1	PLAY1							
1	1	PLAY1						REC1	
2	1	PLAY1				REC2		REC1	
3	1	PLAY1		REC3		REC2		REC1	
0	2	PLAY1		PLAY2					
1	2	PLAY1		PLAY2				REC1	
2	2	PLAY1		PLAY2		REC2		REC1	
0	3	PLAY1		PLAY2		PLAY3			
1	3	PLAY1		PLAY2		PLAY3		REC1	
0	4	PLAY1		PLAY2		PLAY3		PLAY4	

Example: 3REC + 1PLAY

The BNC connectors to be used as record and play channels in a 3REC 1PLAY standard configuration need to be cabled as shown below:
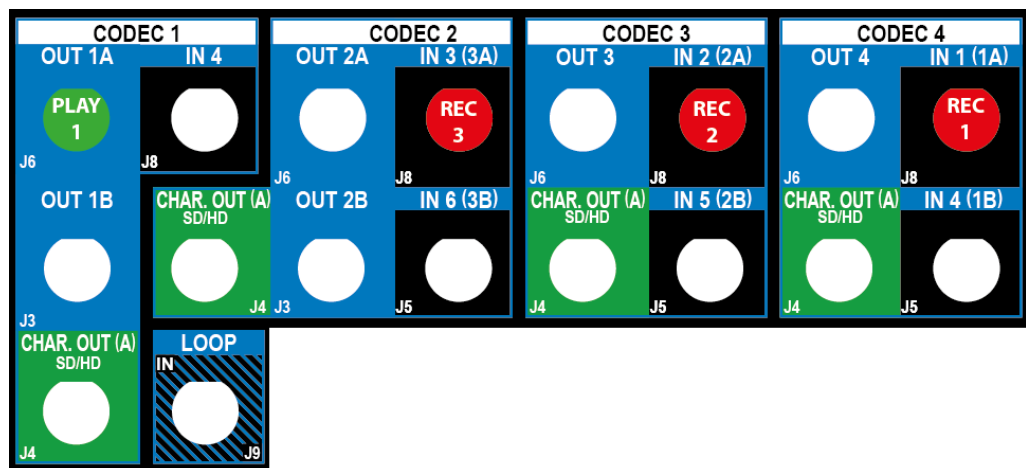
3.2.3.　General Principles on 3D Configurations

Introduction

The 3D configurations can be used on an XSnano server, using the following connection interfaces:

- Dual Link interface, that is to say two connections (on a record or play channel) seen by the EVS server as one logical channel (available with V3X boards only).

Connections on the Rear Panel with V3X Boards

With 3D configurations, a clear distinction should be made between:

- the number of physical channels connected to the BNC connectors of a codec module on the rear panel

    AND

- the links used on the corresponding codec module (COD A or COD B) of the codec board.

The number of physical channels connected to the rear panel of the EVS server depends on the interface used:

- Both connectors of a codec module (for example IN1 and IN1B in REC) are connected with a **Dual Link interface**, which is the only available interface on an XSnano server.

Both primary and secondary links of the codec module (COD A or COD B) on the V3X board are used.

3.2.4.　3D Standard Configurations

Assignment Principles

> **Note**
> The 3D Dual Link configurations are only available on an XSnano server equipped with V3X boards.

The following rules on connector assignments on the rear panel apply to 3D configurations:

- For 3D in Dual Link with V3X boards, the primary link of a codec module is used for the first connector, and the secondary link for the same codec module is used for the second connector.

Available Configurations

The tables below show the available 3D configurations with standard cameras on an XSnano server. They show the link assignment at the level of the codec module of a V3X board.

		IN4/OUT1		IN3/OUT2		IN2/OUT3		IN1/OUT4	
#REC	#PLAY	Prim. Link	Sec. Link	Prim. Link	Sec. Link	Prim. Link	Sec. Link	Prim. Link	Sec. Link
1	0							REC1A	REC1B
2	0					REC2A	REC2B	REC1A	REC1B
3	0			REC3A	REC3B	REC2A	REC2B	REC1A	REC1B
4	0	REC4A	REC4B	REC3A	REC3B	REC2A	REC2B	REC1A	REC1B
0	1	PLAY1A	PLAY1B						
1	1	PLAY1A	PLAY1B					REC1A	REC1B
2	1	PLAY1A	PLAY1B			REC2A	REC2B	REC1A	REC1B
0	2	PLAY1A	PLAY1B	PLAY2A	PLAY2B				
1	2	PLAY1A	PLAY1B	PLAY2A	PLAY2B			REC1A	REC1B
2	2	PLAY1A	PLAY1B	PLAY2A	PLAY2B	REC2A	REC2B	REC1A	REC1B

Example: 3D Dual Link 2REC + 2PLAY

The BNC connectors to be used as recorder and play channels in a 3D Dual Link configuration 2REC + 2PLAY need to be cabled as shown below:
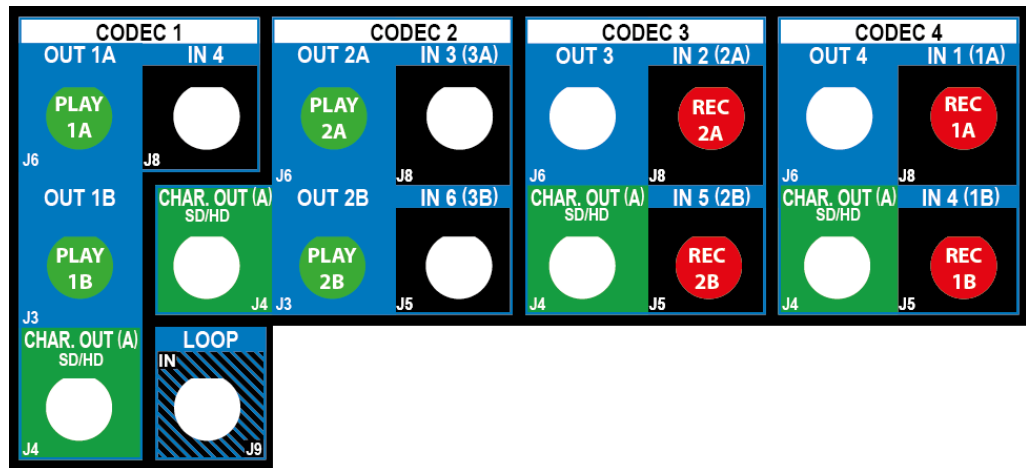
3.3.   Server Tab

3.3.1.   Overview

Server Tab

The Server tab consists of a single page in the basic or advanced mode in the server-based application. It covers the settings related to video codecs and standards, time reference, phase definition, interpolation activation, and PC LAN.

Settings List

The table below presents the settings of the Server tab. It specifies whether the setting is available:

- in the basic or advanced display mode in the server-based and web-based interfaces
- in the **Technical Setup** menu of the Remote Panel.

Setting Name	Basic	Advanced	Technical Setup
Video and reference settings	**P1**	**P1**	
Field rate	X	X	
Resolution	X	X	
Codec	X	X	
Bitrate	X	X	
Horizontal Res./Recorded Lines		X	
LTC Timecode	X	X	
Sync PC Time to TC		X	
Genlock	X	X	
Phase definition settings		**P1**	**T1.1**
SD		X	X
HD to SD SDI		X	X
Interpolation settings		**P1**	**T1.2**
Vertical interp.		X	X
Four Lines		X	X
PC LAN settings		**P1**	

Setting Name	Basic	Advanced	Technical Setup
IP Address	X	X	
Subnet Mask	X	X	
Default Gateway	X	X	

3.3.2. Video and Reference

Video and Reference Settings

Introduction

The Video and Reference settings are available on the Server tab in the server-based application (1st page) and web-based interface. These settings are not available in the Technical Setup menu of the Remote Panel.

> ⚠️ **Warning**
> Most Video and Reference settings (all except Sync PC time and Genlock) require an application reboot (**ALT+Q** from the operational windows) for changes to be taken into account.

The Video and Reference settings are highlighted in the screenshot of the server-based application shown below:

```
                CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                    1/1 Advanced Mode
Video and reference
Field rate          59.94Hz
Resolution          525i
Codec               DVCPro 50
Bitrate (Mbps)      50
Recorded lines      480 lines (L23-262 ; L285-524)
LTC Timecode        00:00:00:00      OK
Sync PC Time to TC  No         every  00h15
Genlock             Blackburst       OK   Studio

Phase definition
SD                  0        Half Pixel (37ns ; -12000 -> 15000)

Interpolation
Vertical interp.    No
Four Lines          No

PC Lan
IP Address          172.016.058.005  Connected
Subnet Mask         255.255.000.000
Default Gateway     172.016.000.001
ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page    F1:Help
```

Field Rate

Description	Field frequency used (Hz). Both field rate and resolution give the video standard.
Values	50.00 Hz (PAL) - default 59.94 Hz (NTSC) 59.94 Hz (J)

Resolution

Description	Vertical resolution used (number of white-to-black and black-to-white transitions that can be seen from the top to the bottom of the picture) (pixel + type). Both field rate and resolution correspond to the video standard. With an XSnano server, SD and HD video standards can be available if the relevant license codes are activated.
Values	In SD: • 525i • 625i In HD: • 720p • 1080i

Codec

Description	Algorithm used to compress and decompress the video signal. The codecs available on the EVS server depend on the video standard used, as well as on the active license codes. See section "Codec Availability" on page 63 for detailed information on codec availability.
Values	In SD: • DVCPro 50 In HD: • DVCPro HD

Bitrate

Description	Number of megabits processed per second (Mbps). The bitrate depends on the codec.
Values	See section "Codec-Related Information" on page 63 for detailed information on bitrates per codec,

Horizontal Res. (HD)

Description	Number of white-to-black and black-to-white transitions that can be seen from the left to the right of the picture (pixels). The setting value depends on the selected video standard.
Values	See section "Codec-Related Information" on page 63 for detailed information on horizontal resolution for each video standard and codec.

Recorded Lines (SD)

Description	Number of lines recorded from the left to the right of the picture. The setting value depends on the selected video standard.
Values	See section "Codec-Related Information" on page 63 for detailed information on recorded lines for each video standard and codec.

LTC Timecode

Description	Longitudinal timecode (timecode information stored on a separate track from the video) delivered to the EVS server, and timecode status.
Values	The timecode is given as hh:mm:ss:fr The timecode status can be 'OK', 'BAD', 'LOST' or 'DRIFT' (defined by the EVS server).

Sync PC Time to TC

Description	Specifies whether the PC time is synchronized with the timecode, and how often the synchronization takes place.
Values	**Synchronization:** 'Yes', 'No' **Frequency:** by default 'every 00h15' (not editable)

Genlock

Description	Specifies the type of genlock signal, the status and the frame synchronizer mode.
Values	**Type:** 'Blackburst' or 'Tri-Sync' (always 'Blackburst' in SD) **Status:** 'OK' or 'BAD' (defined by the EVS server) **Mode:** 'Studio' (no correction of a shifted video signal) or 'Resync' (resynchronization of a shifted video signal)

Codec Availability

Codec Availability Depending on License Codes

The following table presents the codec availability for an XSnano server depending on the license code. 'Yes' in the **Available** column means the codec (and the related license code) is available by default:

Codec	V3X Codec Board	COHX Codec Board
SD		
DVCPro 50	with code 9	with code 9
HD		
DVCPro HD	with code 8	with code 8

Note

On servers equipped with a COHX board, the codecs availability depends on the board type (COHX SD, COHX HD, or COHX SD/HD).

Codec-Related Information

Bitrates and Recorded Lines in SD 525i / 625i

	SD 525i	SD 625i
Codec Type	DVCPro 50	
Bitrate	50 Mbps	
Default bitrate	50 Mbps	
Recorded video lines	480 lines (L23-262; L285-524)	576 lines (L23-310 ; L335-622)

Bitrates and Horizontal Resolution in HD 720p / 1080i

	HD 1080i 50 Hz	HD 1080i 59.94 Hz	HD 720p 50 Hz	HD 720p 59.94 Hz
Codec Type	DVCPro HD			
Bitrate	100 Mbps			
Default bitrate	100 Mbps			
Horizontal Resolution	1440	1280	960	

Note

The dynamic bitrate management system modifies compression tables for each recorded field to keep the bitrate of the encoded stream as close as possible to the target. A higher bitrate means better picture quality and less storage capacity but a higher bandwidth is required. Improper values can lead to exceed disks performance, causing frozen pictures during playback.

3.3.3. Phase Definition Settings

Introduction

The Phase Definition settings are available on the Server tab in the server-based application (1st page) and web-based interface in the advanced mode.

The Phase Definition settings are highlighted in the screenshot of the server-based application shown below:

SD (Standard Definition)

Description	Allows adjusting the digital main phase of the mainframe for the standard definition. The value is adjusted by steps of half pixels. The values depends on the genlock type (See section "Video and Reference Settings" on page 60).
Values	• If the Genlock type is set to 'Blackburst', the main phase for SD can be adjusted by steps of half pixels (37 ns) between - 12000 ns and +15000 ns. • If the Genlock type is set to 'Tri-Sync' (only possible in HD resolutions), the main phase for SD can be adjusted by steps of half pixels (37 ns) between - 30000 ns and +32000 ns.

HD to SD SDI / SD SDI to HD

Description	Allows adjusting the secondary phase of the mainframe, that is to say the relative phase of the: • HD SDI outputs compared to the phase of the SD SDI outputs with a 'Blackburst' genlock. • SD SDI outputs compared to the phase of the HD SDI outputs with a 'Tri-Sync' genlock. This setting only applies to HD resolutions. See section "Video and Reference Settings" on page 60 for more information on genlock type.
Values	• If the Genlock type is set to 'BlackBurst', the secondary phase for HD to SD SDI can be adjusted by steps of half pixels (13.5 ns) between - 1000 ns and +1000 ns. • If the Genlock type is set to 'Tri-Sync', the secondary phase for SD SDI to HD can be adjusted by steps of half pixels (37 ns) between - 400 ns and +400 ns.

⚠️ **Warning**
• The SD phase is always adjusted according to the SDI outputs. Internal CVBS outputs have a delay of 48 x 37 ns compared to the corresponding SDI outputs.
• The internal CVBS outputs cannot be used to feed directly a vision mixer or any equipment performing video effects, since the phase of the chroma subcarrier is not adjustable internally.

3.3.4.   Interpolation Settings

Introduction

The Interpolation settings are available on the Server tab in the server-based application (1st page) and web-based interface in the advanced mode.

The Interpolation settings are highlighted in the screenshot of the server-based application shown below:

```
            CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERUER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                      1/1 Advanced Mode
Uideo and reference
Field rate            59.94Hz
Resolution            525i
Codec                 DUCPro 50
Bitrate (Mbps)        50
Recorded lines        480 lines (L23-262 ; L285-524)
LTC Timecode          00:00:00:00      OK
Sync PC Time to TC    No          every  00h15
Genlock               Blackburst       OK  Studio

Phase definition
SD                    0           Half Pixel (37ns ; -12000 -> 15000)

Interpolation
Vertical interp.      No
Four Lines            No

PC Lan
IP Address            172.016.058.005  Connected
Subnet Mask           255.255.000.000
Default Gateway       172.016.000.001
ALT+A:Apply F3:Basic/Advanced  Esc:Quit  PgUp/PgDn:Change page        F1:Help
```

General Description

The interpolation process aims at reducing the vertical jitter of the pictures that is present during slow-motion replays. This vertical jitter is actually caused by a violation of the frame parity when playing back the pictures at less than 100 % speed.

The process consists in re-building new frames to produce a more transparent result. These frames have to be interpolated, that is calculated by making suitably weighted averages of adjacent lines.

There are two interpolation modes: the two-line interpolator and the four-line interpolator. They are not mutually exclusive:

•   The two-line interpolator reduces the vertical jitter, but also the vertical bandwidth.

•   The four-line interpolator makes it possible to have perfectly steady pictures, but reduces even more the vertical bandwidth.

> **Note**
> All VTRs use interpolation in PLAY VAR mode.

Vertical Interp. (Vertical Interpolation)

Description	Enables or disables the two-line interpolation process.
Values	• No (default) • Yes

Four Lines

Description	Enables or disables the four-line interpolation process.
Values	• No (default) • Yes

3.3.5.   PC LAN Settings

Introduction

The PC LAN settings are displayed on the Server tab in the server-based application (1st page) and web-based interface in the advanced mode.

The PC LAN settings are highlighted in the screenshot of the server-based application shown below:

Note

The PC LAN settings are read-only in the Multicam Configuration window. You can modify them in the Multicam Setup window, using the **Set LAN PC address** command. See section "Setting the Server LAN PC Address" on page 25 for more information.

General Description

The PC LAN settings allow the MTPC board of an EVS server to communicate and exchange information with other EVS hardware on a setup.

IP Address

Description	IP address to connect to the port #1 of the MTPC board on the server.
Values	The IP addresses 0.0.0.0 and 255.255.255.255 are not allowed.

Subnet Mask

Description	Range of logical addresses within the address space assigned to the MTPC board connection.

Default Gateway

Description	IP address of the router on the network that the MTPC board can use as an access point to external networks.

3.4. Channels Tab

3.4.1. Overview

Channels Tab

The Channels tab consists of maximum nine pages in the advanced mode in the server-based application, and two pages in the basic mode. The Channels tab includes the settings related to video and audio channels, type and configuration of recorders, audio format and audio-video synchronization parameters.

Setting List

The table below presents the settings of the Channels tab. They specify where the setting groups are available (page) and whether each setting is available:

- in the basic or advanced display mode in the server-based and web-based interfaces. In the web-based interface, the settings are all displayed on one page.

- in the **Technical Setup** menu of the Remote Panel.

Setting Name	Basic	Advanced	Technical Setup
Base settings	P1	P1	T2.X
Inputs	X	X	X
Outputs	X	X	X
Base config	X	X	X
3D	X	X	X
3G/Dual	X	X	X
Port settings	P1	P1	T2.X
RS422 #1-#4		X	X
Channels and control settings	P1	P1	T2.X
OUT1-4 / IN1-4	X	X	X
Name	X	X	X
Main ctrl	X	X	X
Sec. ctrl		X	X
Mode		X	X
OSD		X	

Setting Name	Basic	Advanced	Technical Setup
Audio settings	**P2**	**P2**	**T2.X**
Audio connectors	X	X	X
Number of tracks	X	X	X
Audio full scale		X	X
Ancillary mode		X	X
Sample rate conv.		X	X
Audio monitoring group	**P2**	**P2**	**T2.X**
Mon #1-#4	X	X	X
Advanced audio settings (Inputs)	—	**P3**	—
Advanced audio settings (Embedded outputs)	**—**	**P4**	—
Advanced audio settings (Digital AES/EBU outputs)	**—**	**P5**	—
Advanced audio settings (Analog outputs)	—	**P6**	—
Recorder settings	—	**P7**	**T2.X**
Loop recording		X	X
Rec auto start		X	X
Clip Capacity		X	X
IN1-6 - % loop		X	X
Timecode settings	—	**P8**	**T2.X**
LTC		X	
User		X	X
Primary TC		X	X
SMPTE 334M packets management settings	—	**P8**	**T2.X**
Decoding		X	X
Encoding		X	X
Custom 1 / 2		X	
SD OUT Encoding		X	
Timecode insertion settings	—	**P9**	—

Setting Name	Basic	Advanced	Technical Setup
IN Loop settings		X	
SD OUT settings		X	
HD OUT settings		X	

3.4.2.   Channels

Base Settings

Introduction

The base settings allow defining the main characteristics of a configuration as regards play and record channels.

These fields are available in the following interfaces:

*   in the Multicam Configuration window, Channels tab, in the advanced display mode on page 1 on the server- and web-based interfaces.

*   in the Technical menu of the Remote Control Panel (T2.X).

> ⚠️ **Warning**
> Some base settings (Inputs, Outputs Base config.) require an application reboot (**ALT+Q** from the operational windows) for changes to be taken into account.

The following screenshot highlights the Base settings, defined on page 1 of the Channels tab in the server-based application:

```
                 CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                    1/9 Advanced Mode
Base settings                            Port settings
Inputs               2                   RS422 #1      Sony BVW75
Outputs              2                   RS422 #2      Sony BVW75
Base config          Server              RS422 #3      Sony BVW75
3D                   No                  RS422 #4      Sony BVW75
3G/Dual              No

Channel and control settings
                      Name           Main ctrl    Sec. ctrl     Mode   OSD
OUT1   PGM1   PGM1                 Sony BVW75  1  --------
OUT2   PGM2   PGM2                 Sony BVW75  2  --------
IN1    REC1   REC1                 Sony BVW75  3  --------
IN2    REC2   REC2                 Sony BVW75  4  --------




ALT+A:Apply  F3:Basic/Advanced  Esc:Quit  PgUp/PgDn:Change page       F1:Help
```

Inputs

Description	Number of logical record channels in the given configuration. The partition of the disk storage between these channels, and the advanced audio settings are automatically adapted to the number of record channels.
Values	The number of supported channels depends on the chassis, and the mode: • On XSnano: 0-4 (all config.) See section "General Information on Supported Configurations" on page 53 for more information on number of record channels and on supported configurations.

Outputs

Description	Number of logical play channels in the given configuration.
Values	• On XSnano: 0-4 (all config.) See section "General Information on Supported Configurations" on page 53 for more information on number of record channels and on supported configurations.

Base Config.

Description	Mode the EVS server is working in. The base configurations available depend on the server type, and on the valid license codes.
Values	• **Server**: mode where the EVS server can be controlled by one or more of the following protocols: Sony BVW75, VDCP, Odetics, DD35, but not from the Multicam production screens. • **XSense** : mode where the EVS server can be controlled by the XSense Remote Panel, or from the Multicam production screens.
Default value	Server

3D

Availability	The parameter is only available with V3X boards if a 3D option has been subscribed to (license code 23 for 3D Dual Link).
Description	Activates the 3D option, using the Dual Link. This option makes it possible to use the server to record and play back 3D video.
Values	Yes / No (default).

3G/Dual

Description	Defines the interface the EVS server will use with the 3D standards: • The Dual Link interface consists of a pair of HD-SDI serial links and provides a bitrate of 2.970 Gbit/s. • The 3G-SDI is not supported on an XSnano server.

Values	The possible values are:
	• 'No': available in all cases.
	• 'Dual' (Dual-Link) available with:
	  ◦ License code 23 (3D Dual-Link) active AND
	  ◦ 3D setting set to 'Yes'

Default value	No

Port Settings

Introduction

The port settings allow assigning the RS422 ports to the various external controllers (EVS or third-party) that will communicate with the EVS server.
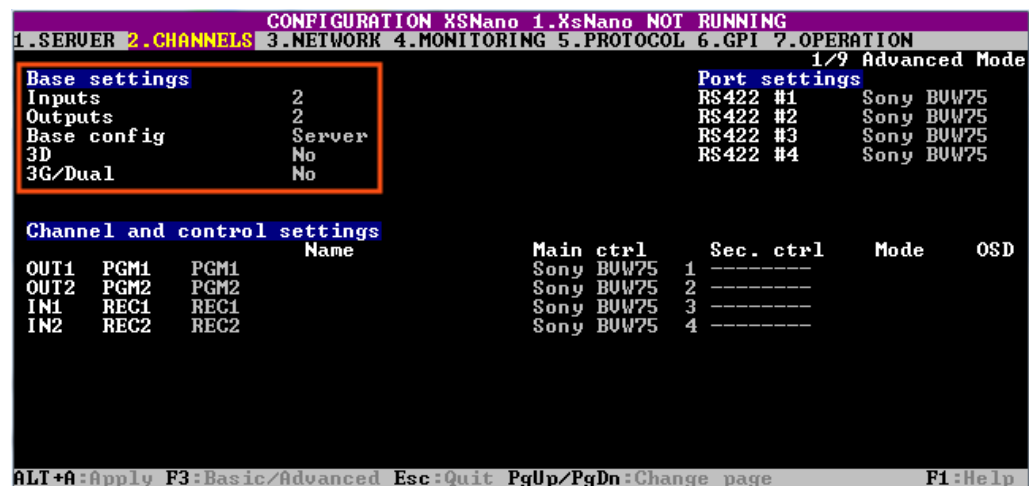
These fields are available in the following interfaces:

• in the Multicam Configuration window, Channels tab, in the advanced display mode on page 1 on the server- and web-based interfaces.

• in the Technical menu of the Remote Control Panel (T2.X).

The following screenshot highlights the Port settings, defined on page 1 of the Channels tab in the server-based application:

```
                     CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                   1/9 Advanced Mode
Base settings                                   Port settings
Inputs                 2                         RS422 #1     Sony BVW75
Outputs                2                         RS422 #2     Sony BVW75
Base config            Server                    RS422 #3     Sony BVW75
3D                     No                        RS422 #4     Sony BVW75
3G/Dual                No


Channel and control settings
                       Name              Main ctrl    Sec. ctrl    Mode    OSD
OUT1   PGM1   PGM1                        Sony BVW75  1 --------
OUT2   PGM2   PGM2                        Sony BVW75  2 --------
IN1    REC1   REC1                        Sony BVW75  3 --------
IN2    REC2   REC2                        Sony BVW75  4 --------




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page          F1:Help
```

RS422 #1 - #4

Description	Specifies what type of device/controller is connected to each RS422 port of the EVS server.
Values	• 'EVS Remote' for XSense Remote Panel (code 96) • 'Sony BVW75' (code 118) • 'XtenD D35' (code 118) • 'Odetics' (and 'Odetics FK') (code 119) • 'VDCP' (and 'VDCP FK') (code 119)
Default	On port #1 (only): Sony BVW75

Note

Odetics FK and VDCP FK are not available directly from the Port setting, but when the Odetics or VDCP protocols are assigned to an RS422 port, the Fill and Key modes are available on the **Main Ctrl** field in the Channels and Control settings.

Channels and Control Settings

Introduction

The Channel and Control settings mainly allow specifying which controllers (main and possibly secondary) have the hand on which play or record channels.

These fields are available in the following interfaces:

• in the Multicam Configuration window, Channels tab, in the advanced display mode on page 1 on the server- and web-based interfaces.

• in the Technical menu of the Remote Control Panel (T2.3 to T2.6).

The following screenshot highlights the Channel and Control settings, defined on page 1 of the Channels tab in the server-based application:

```
                    CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                        1/9 Advanced Mode
Base settings                                 Port settings
Inputs              2                         RS422 #1      Sony BVW75
Outputs             2                         RS422 #2      Sony BVW75
Base config         Server                    RS422 #3      Sony BVW75
3D                  No                        RS422 #4      Sony BVW75
3G/Dual             No

Channel and control settings
                         Name              Main ctrl    Sec. ctrl    Mode    OSD
OUT1   PGM1   PGM1                       Sony BVW75  1 ---------
OUT2   PGM2   PGM2                       Sony BVW75  2 ---------
IN1    REC1   REC1                       Sony BVW75  3 ---------
IN2    REC2   REC2                       Sony BVW75  4 ---------




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page        F1:Help
```

Name

Description	User-defined name for play or record channel. This name will be used for the OSD, and in the IPDirector application suite. The name can contain maximum 24 characters.

Main ctrl (Main Controller)

Description	Name of the main device/controller allowed to control the given play or record channel.
Values	For a controller to be available in the list of values, it must first be assigned to an RS422 port in the port settings.
	In addition, rules specific to each controller apply to the assignment of the controller (used alone or in combinations with other controllers) to play or/and record channels. See section "Rules for Controller Assignment" on page 77 for more information.
	An error message will be displayed to warn you in case of a wrong protocol selection or protocol combination, and the fields that contain errors will be highlighted in red.

Sec. ctrl (Secondary Controller)

Description	Name of the main device/controller allowed to control the given play or record channel.
Values	For a controller to be available in the list of values, it must first be assigned to an RS422 port in the port settings.
	In addition, rules specific to each controller apply to the assignment of the controller (used alone or in combinations with other controllers) to play or/and record channels. See section "Rules for Controller Assignment" on page 77 for more information.
	An error message will be displayed to warn you in case of a wrong protocol selection or protocol combination, and the fields that contain errors will be highlighted in red.

Mode

Description	Specifies how the control on the given play or record channel is managed between the main and secondary controllers, when it is possible to define main and secondary controllers.
Values	Two control modes are possible:
	• **Exclusive mode:**
	The main controller can decide at any time to pass the control to, or to retrieve the control from the secondary controller.
	• **Parallel mode:**
	Any of both controllers can take the control as long as the other controller is not executing a command. The control can thus be freely passed on from one controller to the other.

OSD

Description	Specifies which device (main or secondary controller) will manage the OSD display characters in parallel mode.
Values	Two values are possible:
	• **Main:** The OSD display is managed by the main controller.
	• **Sec.:** The OSD display is managed by the secondary controller.

Rules for Controller Assignment

Main Rules for XSnano server

On an XSnano server, the following main rules are applicable:

- In an XSense base configuration:
    - All Remote Panels must be the first in the list of main controllers, without gap. It is not allowed to have another controller preceding a Remote Panel in this list.
    - Other controllers can be assigned as secondary controllers to PGMs taking into account the protocol-specific rules.
    - No more than 4 play channels on an EVS server can be assigned to Remote Panels, and no more than 3 play channels can be assigned to one Remote Panel.
    - Only a Remote Panel (no other controller) can be assigned to a REC channel as a main controller.
    - No secondary controller can be assigned to a REC channel.
- In a Server base configuration:
    - A Remote Panel is not allowed.
    - Controllers other than the EVS Remote can be assigned to play or record channels, taking into account the protocol-specific rules on controller use and combinations.

Protocol-Specific Assignment Rules

Standalone Protocol

The table shows whether or not the given protocol, used as a standalone (as main controller, without secondary controller) can be assigned to the specified number of play channels, record channels or play and record channel combinations.

The green cells refer to allowed assignments, the red ones to banned assignments. Numbers in the cells refer to the notes mentioned below the table.

	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
1 PGM	green	green	green	green	green	red	red
2 PGM	green	green	green	red	red	green **2**	green
> 2 PGM	green	green	green	red	red	red	red
1 REC	green **1**	green	green	green	green	red	red
> 1 REC	green	green	red	red	red	red	red
1 PGM + 1 REC	green	green	red	red	red	red	red
Several PGM + 1 REC	green	green	red	red	red	red	red
Several PGM + Several REC	green	green	red	red	red	red	red

1. Every recorder

2. Only consecutive PGMs

Protocol Used in Exclusive Mode

The table shows whether or not the given protocol, used in exclusive mode (as a main controller or secondary controller) can be assigned to the specified number of play channels, record channels or play and record channel combinations.

The green cells refer to allowed assignments, the red ones to banned assignments. Numbers in the cells refer to the notes mentioned below the table.

	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
Main Controller							
1 PGM	green	red	red	red	red	red	red
2 PGM	green	red	red	red	red	red	red
> 2 PGM	green	red	red	red	red	red	red
1 PGM + 1 REC[1]	green	red	red	red	red	red	red
1 REC	red	red	red	red	red	red	red
> 1 REC	red	red	red	red	red	red	red
Several PGM + 1 REC[1]	red	red	red	red	red	red	red
Several PGM + Several REC[1]	red	red	red	red	red	red	red
Secondary Controller							
1 PGM	red	green	green	green	green	red	red

	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
2 PGM	🟥	🟩	🟩	🟥	🟥	🟥	🟥
> 2 PGM	🟥	🟩	🟩	🟥	🟥	🟥	🟥
1 PGM + 1 REC[1]	🟥	🟩	🟩	🟥	🟥	🟥	🟥
1 REC	🟥	🟩	🟩	🟥	🟥	🟥	🟥
Several PGM + 1 REC[1]	🟥	🟩	🟥	🟥	🟥	🟥	🟥
Several PGM + Several REC[1]	🟥	🟩	🟥	🟥	🟥	🟥	🟥

1. The recorder cannot be controlled by a secondary controller in exclusive mode. In these cases, the recorder must be standalone or in parallel mode.

Protocol Used in Parallel Mode

The table shows whether or not the given protocol, used in parallel mode (as a main, secondary or mix controller) can be assigned to the specified number of play channels, record channels or play and record channel combinations.

The green cells refer to allowed assignments, the red ones to banned assignments. Numbers in the cells refer to the notes mentioned below the table.

	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
1 PGM	🟩	🟩	🟩	🟩	🟩	🟥	🟥
2 PGM	🟩	🟩	🟩	🟥	🟥	🟥	🟥
> 2 PGM	🟩	🟩	🟩	🟥	🟥	🟥	🟥
1 REC	🟩	🟩	🟩	🟩	🟥	🟥	🟥
> 1 REC	🟩	🟩	🟥	🟥	🟥	🟥	🟥
1 PGM + 1 REC	🟩	🟩	🟩	🟥	🟥	🟥	🟥
Several PGM + 1 REC	🟩	🟩	🟩	🟥	🟥	🟥	🟥
Several PGM + Several REC	🟩	🟩	🟥	🟥	🟥	🟥	🟥

Rules for Controller Combinations

Exclusive mode - Play Channels

The following table shows the supported protocol combinations in exclusive mode on play channels.

Secondary > Primary v	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
Remote	-	green	green	green	green	red	red
VDCP	gray	-	red	red	red	red	red
Sony	gray	red	-	red	red	red	red
Odetics	gray	red	red	-	red	red	red
DD35	gray	red	red	red	-	red	red
Odetics F&K	gray	red	red	red	red	-	red
VDCP F&K	gray	red	red	red	red	red	-

Exclusive mode - REC Channels

The following table shows the supported protocol combinations in exclusive mode on record channels.

Secondary > Primary v	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
Remote	gray	gray	gray	gray	gray	gray	gray
VDCP	gray	-	red	red	red	red	red
Sony	gray	red	-	red	red	red	red
Odetics	gray	red	red	-	red	red	red
DD35	gray	red	red	red	-	red	red
Odetics F&K	gray	red	red	red	red	gray	red
VDCP F&K	gray	red	red	red	red	red	gray

Parallel mode - Play Channels

The following table shows the supported protocol combinations in parallel mode on play channels.

Secondary > Primary v	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
Remote	-	green	green	green	green	red	red
VDCP	-	-	green	red	red	red	red
Sony	-	green	-	green	red	red	red
Odetics	-	red	green	-	red	red	red
DD35	-	red	green	red	-	red	red
Odetics F&K	-	red	red	red	red	-	red
VDCP F&K	-	red	red	red	red	red	-

Parallel mode - REC Channels

The following table shows the supported protocol combinations in parallel mode on record channels.

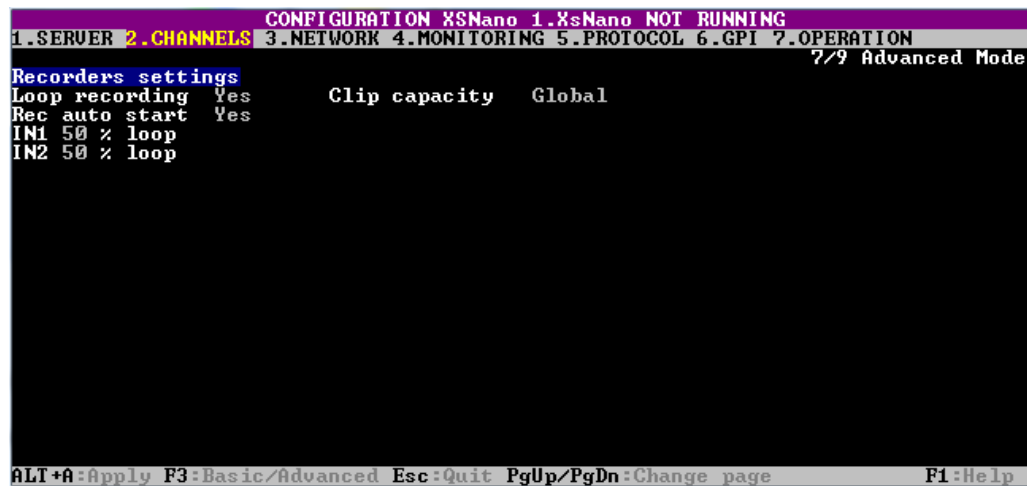| Secondary > Primary v	Remote	VDCP	Sony	Odetics	DD35	Odetics F&K	VDCP F&K
Remote	–						
VDCP	–	–					
Sony	–		–				
Odetics	–			–			
DD35	–				–		
Odetics F&K	–					–	
VDCP F&K	–						–

Recorder Settings

Introduction

The Recorder settings allow specifying configuration settings associated to the record channels.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Channels tab, in the advanced display mode:
  - on page 5, 6 or 7 on the server-based application.
  - on page 1 on the web-based interface.
- in the Technical menu of the Remote Control Panel (T2.X).

The following screenshot highlights the Recorder settings, defined on page 7 of the Channels tab in the server-based application:

```
                    CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                        7/9 Advanced Mode
Recorders settings
Loop recording   Yes        Clip capacity   Global
Rec auto start   Yes
IN1 50 % loop
IN2 50 % loop




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page        F1:Help
```

Loop Recording

Description	Enables/disables the endless loop recording of all record channels of the EVS server.
Values	Yes (default) / No. The value is forced to 'Yes' in XSense configurations.

Clip Capacity

Description	Recording mode on the record channels.
Values	The following values are available: Global / Per channel • **Global**: In this mode, the clip capacity is shared between the different record trains. **Example:** When 3 record trains are used, creating a clip of 30 min on REC1 will take 10 min of recording capacity equally from each record train. • **Per channel**: In this mode, the clip capacity is only relevant to the individual record train. **Example:** When 3 record trains are used, creating a clip of 30 min on REC1 will take 30 min of recording capacity from the 1st record train, but will not affect the recording capacity of the other two record trains.
Default value	The default value depends on the base configuration: • **Global (locked)**: ◦ in XSense configurations • **Per channel**: ◦ in Server configurations

Rec Auto Start

Availability	This setting is displayed when a Server configuration is running.
Description	Automatic start of the record channels after the EVS server has initialized.
Values	Yes (default) / No

IN1 XX% Loop

> ⚠️ **Warning**
>
> A change to this parameter requires an application reboot (**ALT+Q** from the operational windows) to be taken into account.

Description	This parameter contains two types of information on the specified recorder: **Recording Capacity: XX%** percentage of the disk space allocated to each channel. **Loop / No Loop:** indicates whether the Loop Recording parameter is enabled or not.
Values	The following values are possible: • **Recording Capacity:** The value is defined by the user. The total of all values must not exceed 100%. By default, the recording capacity is evenly distributed among all recorders. **Example:** In a 2 REC 2 PLAY configuration, the recording capacity will be 50% for each recorder by default. • **Loop / No Loop:** • The value directly depends on the Loop Recording setting: ◦ If the Loop Recoding is enabled, the value will be 'Loop'. ◦ If the Loop Recording is disabled, the value will be 'No Loop'.

3.4.3. Audio

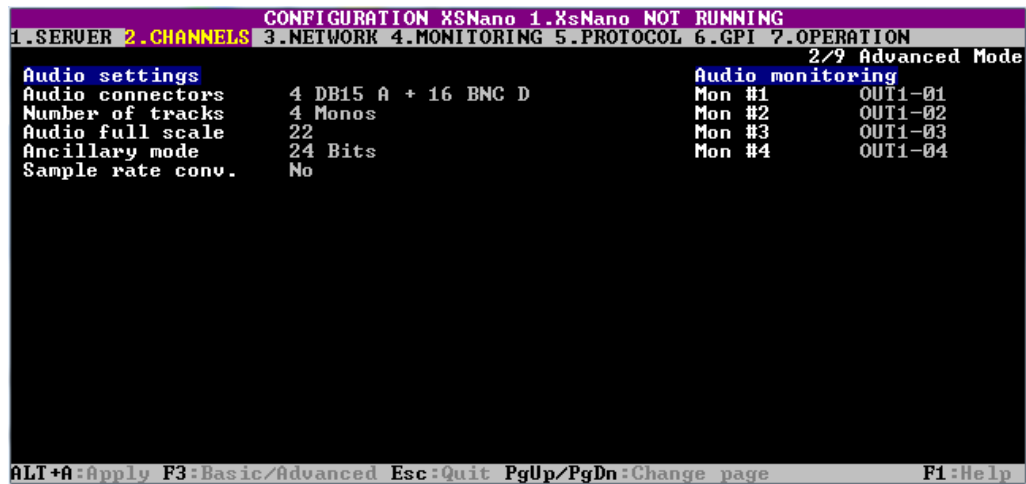## Audio and Audio Monitoring Settings

Introduction

The Audio settings allow users to specify, among others, the physical configuration for audio connectors, and the number of audio tracks.

The Audio Monitoring settings allow users to specify which audio signals are monitored.

These fields are available in the following interfaces:

• in the Multicam Configuration window, Channels tab, in the advanced display mode:

 ◦ on page 2 on the server-based application.

 ◦ on page 1 on the web-based interface.

• in the Technical menu of the Remote Control Panel (T2.X).

The following screenshot shows Audio settings and Audio Monitoring settings, defined on page 2 of the Channels tab in the server-based application:

```
            CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                               2/9 Advanced Mode
Audio settings                             Audio monitoring
Audio connectors    4 DB15 A + 16 BNC D     Mon #1        OUT1-01
Number of tracks    4 Monos                 Mon #2        OUT1-02
Audio full scale    22                      Mon #3        OUT1-03
Ancillary mode      24 Bits                 Mon #4        OUT1-04
Sample rate conv.   No




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page          F1:Help
```

Audio Connectors

Description	Type of connectors available in the hardware configuration.
	The audio formats available on the EVS server, and in the Advanced audio settings pages, depend on the audio hardware configuration.
	Note that the values defined on this field are not validated against the real hardware configuration.
Values	The following table shows the available audio hardware configurations, and the available audio formats based on this hardware configuration:

Hardware configuration	Available formats
• None	E (Embedded) EY (Dolby E Embedded)
• 4 DB 15 A + 16 BNC D	E - EY - A - D - DY
• 4 DB 15 A + 4 DB 15 D	E - EY - A - D - DY

Number of Tracks

⚠️ **Warning**

A change to this parameter requires an application reboot (**ALT+Q** from the operational windows) to be taken into account.

Description	Number of mono audio tracks associated to each video channel.
Values	4 Monos (default), 8 Monos or 16 Monos

Audio Full Scale

Description	Maximum audio level for the analog outputs on the server (in dB). It allows indirectly defining the head room, as the audio full scale is 4 dB higher than the head room. As the default value for the audio full scale is 22 dB, the default value for the head room is 18.
Values	Range of values: [10…30] dB
Default value	22 dB

Ancillary Mode

Availability	This setting is displayed in SD configurations.
Description	Encoding method used for digital audio.
Values	20 Bits / 24 Bits (default)

Sample Rate Conv. (Conversion)

Description	Specifies whether the input sample rate is converted. This parameter is only available with the digital AES/EBU audio format. If this parameter is set to 'No', the user has to ensure that the signals are properly synchronized.
Values	Yes (default) / No

Audio Monitoring: Mon #1 - Mon #4

Description	Specifies the source of the audio signal that will be sent to each of the four audio monitoring connectors (numbered from left to right on the backplane).
Value	For each audio monitoring connector, the audio signal to be monitored is specified by the video channel number and the audio mono channel number. **Example:** The value 'OUT1-01' for Mon #1 means that the audio signal of the 1st audio mono channel of the PGM1 is sent to the monitoring connector 1.
Default Values	By default, the audio signal of the first play channel, and the audio mono channels from 1 to 4 (OUT1-01 to OUT1-04) are respectively assigned to the Mon #1 to Mon #4 connectors.

Overview on Advanced Audio Settings

Introduction

The Advanced Audio settings are defined from the Channels tab, pages 3 to 6 of the Multicam Configuration window. These pages are only available in the advanced mode. They allow audio channel routing, muting, and adjusting the audio gain.

The Advanced Audio settings for the **inputs** allow users to specify how the audio sources are routed to the audio mono channels of each record channel

The Advanced Audio settings for the **outputs** allow users to specify how the audio mono channels are routed to each play channel (for embedded audio) or to the various physical audio connectors (digital or analog connectors).

The table below shows in which page the advanced audio settings are available depending on the audio type:

Page	Type of audio settings
Page 3	audio inputs
Page 4	audio embedded outputs
Page 5	audio digital outputs (AES/EBU)
Page 6	audio analog outputs

Note

The settings for audio digital and analog outputs are only available when the corresponding connectors are defined in the **Audio Connectors** field that reflects the audio hardware configuration.

General Principles

The advanced audio settings are presented on each page as a table:

In the table, the information is organized as follows:

- The rows correspond to the audio mono channels of the A/V material stored on the EVS server. The number of rows depends on the value assigned to the **Number of tracks** setting defined in the Audio settings field group.

- The columns correspond to the record channels or play channels.

- The values in the cells show the rooting of the audio mono channels:
  - from the source to the material stored on the EVS server (audio inputs)
  - from the material stored on the EVS server to the play channels (audio outputs)

The values in the cells of the table, for example 'E1-01', are made up as follows:
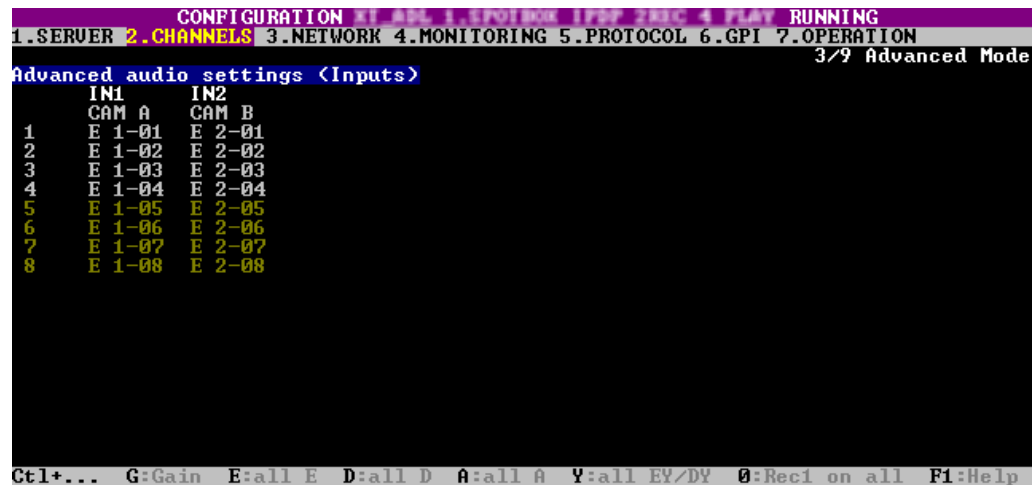
- The first letter refers to the audio type (E for embedded, D for digital, A for analog, DY for Dolby Digital, EY for Dolby Embedded).

- The first number before the hyphen refers to the play or record channel.

- The figure after the hyphen refers to the audio mono channel.

Audio Input Settings

Description

The advanced audio input settings allow users to specify:

- which type of audio source should be taken into account in the recording process

- how the audio mono channels of the source material will be distributed to the material recorded on the EVS server.

- whether audio gain or audio muting should be applied in the recording process.

Example 1

The E2-03 value located in the intersection between row 3 and column IN2 means that the 3rd audio mono channel of the embedded audio source recorded into the IN2 (CAMB) connector will be recorded on the same position on the EVS server.

Example 2

```
     IN1      IN2
     CAM A    CAM B
1    E 1-01   E 2-01
2    E 1-01   E 2-01
3    E 1-01   E 2-01
4    E 1-01   E 2-01
5    E 1-05   E 2-05
6    E 1-05   E 2-05
7    E 1-05   E 2-05
8    E 1-05   E 2-05
```

The allocation of the source audio mono channels shown above means that:

•   The embedded audio source of the 1st mono channel of the record channel (IN1 or IN2) will be stored on mono channels 1 to 4 of the recorded material.

•   The embedded audio source of the 5th mono channel of the record channel (IN1 or IN2) will be stored on mono channels 5 to 8 of the recorded material.

Example 3

```
     IN1      IN2
     CAM A    CAM B
1    D   01   D   09
2    D   02   D   10
3    D   03   D   11
4    D   04   D   12
5    D   05   D   13
6    D   06   D   14
7    D   07   D   15
8    D   08   D   16
```

The allocation of the source audio mono channels shown above means that:

•   The audio source from the digital connectors is used for the material recorded on the EVS server.

•   The audio source 1 from the digital connector will be mapped to the 1st mono channel of the material recorded on the EVS server, and so on.

Example 4

```
     IN1      IN2
     CAM A    CAM B
1    E 1-01   E 1-01
2    E 1-02   E 1-02
3    E 1-03   E 1-03
4    E 1-04   E 1-04
5    E 1-05   E 1-05
6    E 1-06   E 1-06
7    E 1-07   E 1-07
8    E 1-08   E 1-08
```

You will allocate the source audio mono channels as shown above when you want to send the audio mono channels from REC1 to all other record channels.

The shortcut **CTRL+0** allows you doing this more rapidly in the server-based application.

Audio Output Settings

Description

The audio output settings for audio allow users to:

- map the audio mono channels of the material stored on the EVS server to an output mono channel of a play channel.

- specify which audio gain should be applied to each output mono channel.

- mute an output mono channel.

This can be defined for the three audio types: embedded audio, as well as digital and analog audio, if the corresponding connectors are available on the hardware configuration.

Display

The following screenshots show the default audio channel assignment for the three audio types in a configuration with 8 mono channels, 16 digital audio connectors, and 8 analog audio connectors

See section "Default Mapping for Audio Inputs and Outputs" on page 93 for a full overview on the default mono channel assignment in the various supported configurations.

```
            CONFIGURATION                      RUNNING        Zi
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                     4/9 Advanced Mode
Advanced audio settings (Embedded outputs)
        OUT1      OUT2      OUT3      OUT4
        PGM1      PGM2      PGM3      PGM4
    1   E 1-01    E 2-01    E 3-01    E 4-01
    2   E 1-02    E 2-02    E 3-02    E 4-02
    3   E 1-03    E 2-03    E 3-03    E 4-03
    4   E 1-04    E 2-04    E 3-04    E 4-04
    5   E 1-05    E 2-05    E 3-05    E 4-05
    6   E 1-06    E 2-06    E 3-06    E 4-06
    7   E 1-07    E 2-07    E 3-07    E 4-07
    8   E 1-08    E 2-08    E 3-08    E 4-08




Ctl+...   G:Gain   E:all E  Y:all EY   N:all None              F1:Help
```

```
            CONFIGURATION                      RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                     5/9 Advanced Mode
Advanced audio settings (Digital AES/EBU outputs)
        OUT1      OUT2      OUT3      OUT4
        PGM1      PGM2      PGM3      PGM4
    1   D  01     D  09     None      None
    2   D  02     D  10     None      None
    3   D  03     D  11     None      None
    4   D  04     D  12     None      None
    5   D  05     D  13     None      None
    6   D  06     D  14     None      None
    7   D  07     D  15     None      None
    8   D  08     D  16     None      None




Ctl+...   G:Gain   D:all D  Y:all DY   N:all None              F1:Help
```

Example

In the screenshot displayed below, the audio mono channels defined on the A/V material on the EVS server are allocated to the play channels in the following way:

The audio outputs are in dolby embedded format.

By default, an audio mono channel of the A/V material stored the EVS server is sent to the corresponding embedded channel of the play channel. In this example, this is the case for mono channels from 3 to 8.

For mono channels 1 and 2, the default mapping has been changed as follows:

• The audio mono channel 1 of the A/V material is sent to the mono channel 2 of the play channel, and this for all play channels.

• The audio mono channel 2 of the A/V material is sent to the mono channel 1 of the play channel, and this for all play channels.

Default Mapping for Audio Inputs and Outputs

Introduction

The tables below present the channel mapping for audio inputs and outputs in the following configuration:

- XSnano chassis

- Maximum number of recorders or players (see section "General Information on Supported Configurations" on page 53).

- Audio hardware configuration: 4 DB15 Analog + 16 BNC Digital

In configurations with less recorders or players, the irrelevant rows or columns should be disregarded.

Audio (Embedded) Inputs

By default, the audio embedded mono channels from the source material are mapped as shown in the table below onto the A/V material stored on the EVS server.

The table shows the maximum number of players, and an audio configuration with 16 tracks (mono channels):

	OUT 1	OUT 2	OUT 3	OUT 4
Mono1	E1-01	E2-01	E3-01	E4-01
Mono2	E1-02	E2-02	E3-02	E4-02
Mono3	E1-03	E2-03	E3-03	E4-03
Mono4	E1-04	E2-04	E3-04	E4-04
Mono5	E1-05	E2-05	E3-05	E4-05
Mono6	E1-06	E2-06	E3-06	E4-06
Mono7	E1-07	E2-07	E3-07	E4-07
Mono8	E1-08	E2-08	E3-08	E4-08
Mono9	E1-09	E2-09	E3-09	E4-09
Mono10	E1-10	E2-10	E3-10	E4-10
Mono11	E1-11	E2-11	E3-11	E4-11
Mono12	E1-12	E2-12	E3-12	E4-12
Mono13	E1-13	E2-13	E3-13	E4-13
Mono14	E1-14	E2-14	E3-14	E4-14
Mono15	E1-15	E2-15	E3-15	E4-15
Mono16	E1-16	E2-16	E3-16	E4-16

Audio Embedded Outputs

By default, the audio mono channels from the A/V material stored on the EVS server are mapped to the embedded mono channels on the play channels as presented in the table below.

The table shows the maximum number of players, and an audio configuration with 16 tracks (mono channels):

	OUT 1	OUT 2	OUT 3	OUT 4
Mono1	E1-01	E2-01	E3-01	E4-01
Mono2	E1-02	E2-02	E3-02	E4-02
Mono3	E1-03	E2-03	E3-03	E4-03
Mono4	E1-04	E2-04	E3-04	E4-04
Mono5	E1-05	E2-05	E3-05	E4-05
Mono6	E1-06	E2-06	E3-06	E4-06
Mono7	E1-07	E2-07	E3-07	E4-07
Mono8	E1-08	E2-08	E3-08	E4-08
Mono9	E1-09	E2-09	E3-09	E4-09
Mono10	E1-10	E2-10	E3-10	E4-10
Mono11	E1-11	E2-11	E3-11	E4-11
Mono12	E1-12	E2-12	E3-12	E4-12
Mono13	E1-13	E2-13	E3-13	E4-13
Mono14	E1-14	E2-14	E3-14	E4-14
Mono15	E1-15	E2-15	E3-15	E4-15
Mono16	E1-16	E2-16	E3-16	E4-16

Audio Digital Outputs

The default mapping to audio digital output connectors differ depending on the number of tracks (mono channels) defined.

8 Audio Tracks

With audio configurations with 8 tracks (mono channels), the audio mono channels of the A/V material stored on the EVS server are sent to the digital audio output connectors of the play channels as presented in the table below.

The table shows the maximum number of players, and the audio configuration with 8 tracks (mono channels):

	OUT 1	OUT 2	OUT 3	OUT 4
Mono1	D 01	D 09	None	None
Mono2	D 02	D 10	None	None
Mono3	D 03	D 11	None	None
Mono4	D 04	D 12	None	None
Mono5	D 05	D 13	None	None
Mono6	D 06	D 14	None	None
Mono7	D 07	D 15	None	None
Mono8	D 08	D 16	None	None

4 or 16 Audio Tracks

With audio configurations with 4 or 16 tracks (mono channels), the audio mono channels of the A/V material stored on the EVS server are sent to the digital audio output connectors of the play channels as presented in the table below.

The table shows maximum number of players, and an audio configuration with 16 tracks (mono channels):

	OUT 1	OUT 2	OUT 3	OUT 4
Mono1	D 01	D 05	D 09	D 13
Mono2	D 02	D 06	D 10	D 14
Mono3	D 03	D 07	D 11	D 15
Mono4	D 04	D 08	D 12	D 16
Mono5	None	None	None	None
Mono6	None	None	None	None
Mono7	None	None	None	None
Mono8	None	None	None	None
Mono9	None	None	None	None
Mono10	None	None	None	None
Mono11	None	None	None	None
Mono12	None	None	None	None
Mono13	None	None	None	None
Mono14	None	None	None	None
Mono15	None	None	None	None
Mono16	None	None	None	None

Audio Analog

By default, the audio mono channels of the A/V material stored on the EVS server are sent to the analog audio output connectors of the play channels as presented in the table below.

The table shows the maximum number of players, and an audio configuration with 8 tracks (mono channels):

	OUT 1	OUT 2	OUT 3	OUT 4
Mono1	A 01	A 05	None	None
Mono2	A 02	A 06	None	None
Mono3	A 03	A 07	None	None
Mono4	A 04	A 08	None	None
Mono5	None	None	None	None
Mono6	None	None	None	None
Mono7	None	None	None	None
Mono8	None	None	None	None

Modifying the Audio Routing or Type

Introduction

Audio routing settings can be modified in the Advanced Audio Settings pages (p.3-6) of the Channels tab:

- Changing the audio type for all audio channels of a page at the same time is possible using the shortcut keys described below. Changes on individual channels are also possible by manually editing the audio type value.

- Changing the routing of an individual audio channel can be done by editing the cell value in the advanced audio settings tables.

Collective Editing Actions

You can apply the following editing actions to all audio channels of a page using the following shortcuts, when available on the current page:

Command description	Command key
Set all audio channels to Embedded	**CTRL+E**
Set all audio channels to Digital	**CTRL+D**
Set all audio channels to Analog	**CTRL+A**
Set all audio channels to Embedded Dolby E or Digital DolbyE	**CTRL+Y**
Set all audio channels to None	**CTRL+N**
Reset all the audio configuration (also on other pages) to default values	**F5**
Route all audio input channels of REC1 to the other record channels (only audio inputs)	**CTRL+0**
Validating the changes	**ALT+A**

Individual Editing Actions

To modify individual field/cell values (audio type or audio routing), use the general editing commands that are described again below:

Command description	Command key
Selecting a field value	**TAB**
Scrolling down in the list of the possible values for the selected field	**SPACEBAR**
Scrolling up in the list of the possible values for the selected field	**SHIFT + SPACEBAR**

Modifying the Audio Gain and Mute Settings

Introduction

From the Advanced Audio Settings pages (3-6) of the Channels tab, you can not only modify the default routing of audio channels, but you can also do the following:

• adjust the audio gain for each audio mono channel individually

• mute individual audio channels.

The audio gain and audio mute information is hidden by default. The **CTRL+G** command allows you to toggle the display in the tables to show the audio gain and mute information.

The audio gain can be adjusted by steps of 0.75dB, 3dB or 6dB, in the range from -77.25dB to +23.25dB of the current audio level.

The following screenshot shows the display of mute and audio gain settings:
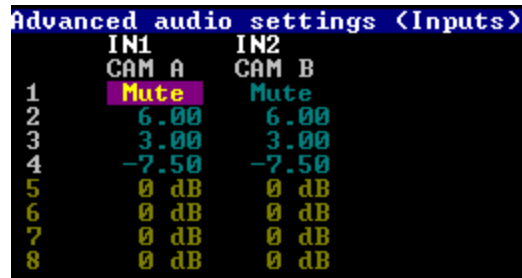
Commands

The following table shows the various commands available to adjust the audio gain, and mute an audio channel.

One of the following command can be applied on an individual channel when it is selected and when the audio gain display is on.

Command description	Command key
Hiding and Showing the audio gain display	CTRL+G
Muting the selected audio channel	CTRL+M
Un-muting the selected audio channel	CTRL+U
Increasing by 0.75dB the audio level of the selected audio channel	SPACEBAR
Lowering by 0.75dB the audio level of the selected audio channel	SHIFT + SPACEBAR
Increasing by 3dB the audio level of the selected audio channel	CTRL+ARROW RIGHT
Lowering by 3dB the audio level of the selected audio channel	CTRL+ARROW LEFT
Increasing by 6dB the audio level of the selected audio channel	CTRL+ARROW UP
Lowering by 6dB the audio level of the selected audio channel	CTRL+ARROW DOWN

Dolby Audio Management

Concepts

- **Dolby Digital or Dolby 5.1 or AC-3**, is an audio coding system containing up to 6 discrete channels of sound, with 5 channels for normal-range speakers (20 Hz - 20, 000 Hz) (Right front, Center, Left Front, Right Rear and Left Rear) and one channel (20 Hz - 120 Hz) for the LFE, or subwoofer.

- **Dolby E** is a professional coding system optimized for the distribution of surround and multichannel audio through two-channel postproduction and broadcasting infrastructures, or for recording surround audio on two audio tracks of conventional digital video tapes, video servers, communication links, switchers, and routers.

Available Dolby Configurations

Case 1: The 5.1 audio signal is carried on 6 discrete PCM audio channels

- It is available on an XSnano server in all configurations.

- The audio can be analog, digital or embedded depending on the configuration.

- In AES audio, if the audio is correctly genlocked to the video, the sample rate converter can be switched off.

Case 2: The 5.1 audio signal is coded in the two-channel Dolby E standard

- Dolby E over AES/EBU links

  ◦ Set the configuration of the pair of channels carrying the Dolby E signal to "DY" in the Multicam Configuration window, Channels tab. This has two effects :

- It disables the sample rate converter on the input channels.

- It forces all transitions to a hard cut.

If the sample rate converter is activated and the audio configuration is a mix between PCM audio over AES and Dolby E over AES, the sample rate converter will only be applied to the PCM over AES signal.

- Dolby E Embedded in the SDI/HD SDI stream

  ◦ Set the configuration of the pair of channels carrying the Dolby E signal to "EY" in the Multicam Configuration window, Channels tab. This will force the transition to a hard cut.

  ◦ The sample rate converter parameter does not apply to embedded audio.

The Dolby E transitions will be correct as long as:

- the configuration is correct

- the AES stream containing Dolby E is correctly synchronized with the video

Dolby E transitions will not be correct (2 frames of mute at the transitions) if the audio type is set to E instead of EY or D instead of DY.

Audio effects (scrub, slow motion) are not possible in Dolby E. If they are used anyway, the audio will be muted.

3.4.4. Timecode and Data Insertion

Timecode Settings

Introduction

The Timecode settings allow specifying which type of timecode the users want to use as the reference to work on a given recorder of an EVS server.

The selection of a timecode type, using the timecode settings, rely on the management of two timecode jump tables.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Channels tab, in the advanced display mode:
  - on page 6, 7 or 8 on the server-based application.
  - on page 1 on the web-based interface.
- partly in the Technical menu of the Remote Control Panel (T2.X).

The following screenshot highlights the Timecode settings, defined on page 8 of the Channels tab in the server-based application:
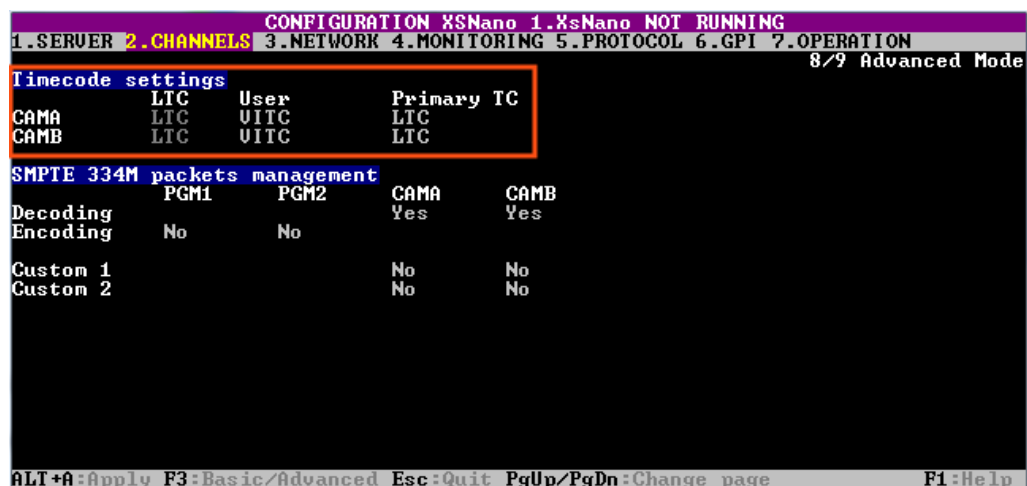
LTC

Description	Longitudinal timecode (timecode defined on or plugged into the EVS server) automatically stored in the first timecode jump table (LTC table). This is not possible to modify the timecode type stored in the first timecode jump table.
Values	LTC (non-editable)

User

Description	Timecode type stored in the second timecode jump table (User TC table).
Values	In SD: • LTC • VITC In HD: • LTC • HANC LTC • HANC VITC

Primary TC

Description	Timecode type that is displayed at the bottom the VGA and is used to work with the video material stored on the given recorder. Usually, an LTC timecode is used to perform operations on live events. A VITC timecode is used for video material ingested from tapes as it is the timecode embedded in the video signal.
Values	• **LTC:** LTC timecode, which is automatically stored in the LTC table. It is specified in the **LTC** field. • **User:** User-defined timecode, which is stored in the USER TC table and specified in the **User** field.
OSD Display	Depending on the value selected for this setting, the timecode displayed at the bottom of the user's OSD will have a different color: • If the LTC timecode is selected, the timecode color will be white. • If the USER timecode is selected, the timecode color will be yellow.

Timecode Insertion Settings

Introduction

The Timecode Insertion settings allow the management of VITC or ANC timecodes channel by channel.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Channels tab, in the advanced display mode:
  - ◦ on page 7, 8 or 9 on the server-based application.
  - ◦ on page 1 on the web-based interface.

The following screenshot shows the Timecode Insertion settings in SD on page 9 of the Channels tab in the server-based application:
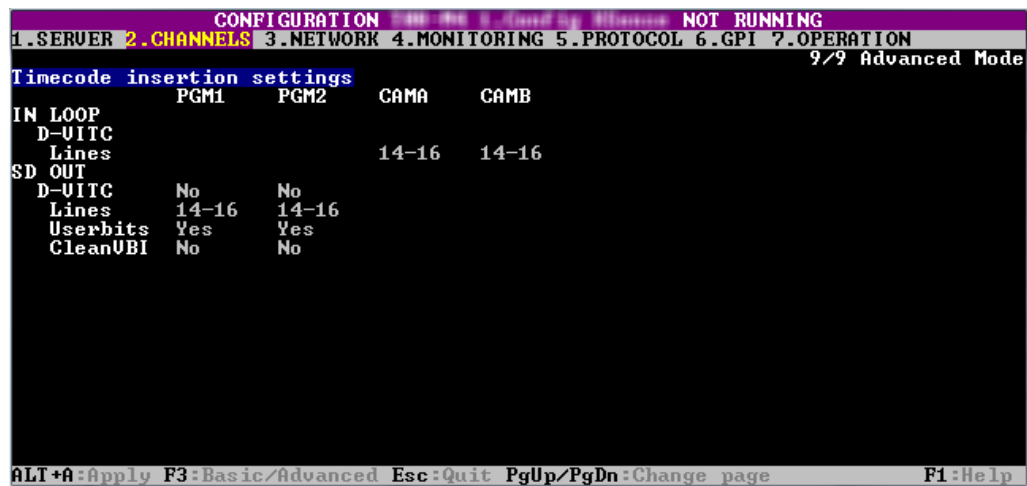
The screenshot below shows the Timecode Insertion settings in HD.
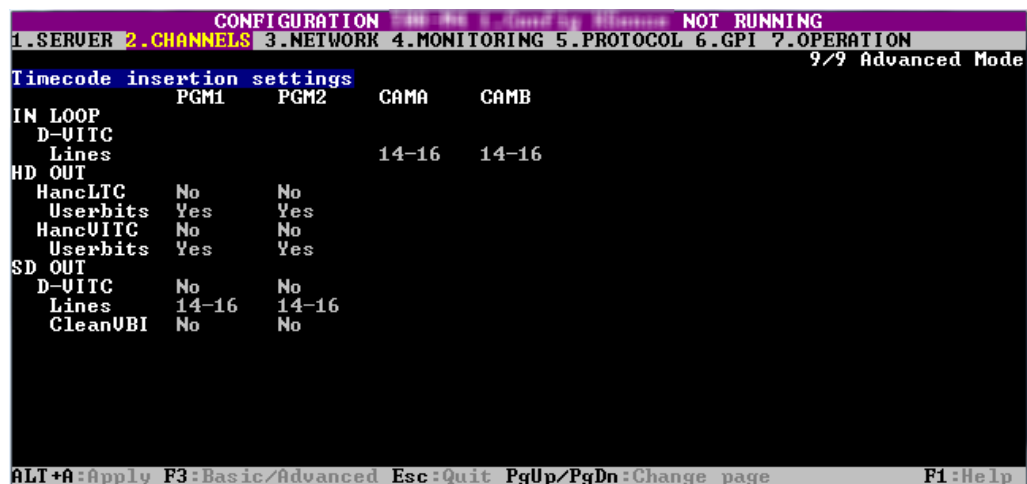
In Loop

D-VITC

The D-VITC (Digital Vertical Interval Timecode) and userbits are always written on the monitoring SD outputs of the record codec and are the same as on the source video.

Lines

Description	Lines on which the VITC must be written on the output connectors of the record codec.
Values	From 06-08 to 20-22
Default Values	14-16 in NTSC 19-21 in PAL

HD OUT (in HD)

HAnc LTC / HAnc VITC

Description	Enables/disables the insertion of the embedded timecode (HAnc LTC or HAnc VITC) in the HD output.
Values	The values specified for the HAnc LTC and HAnc VITC fields have to be the same. The values can be as follows: • **No** — No new timecode inserted in the output. • **In (default)** — Same timecode as in the input inserted in the output. • **LTC** — Timecode from the LTC table inserted in the output. • **USER** — User-defined timecode inserted in the output. • **TC 0** — All HAnc LTC/HAnc VITC timecodes generated in the video signal coming out of the given PGM will remain static and fixed to 00:00:00:00.

UserBits

Description	Enables/disables the insertion of the user bits in the HD output.
	The values specified for the HAnc LTC and HAnc VITC fields have to be the same.
	When TC0 is selected in the HAnc LTC and HAnc VITC field, the user bits values will also remain static and fixed to 00:00:00:00 whatever the selected value.
Values	Yes (default) / No

SD OUT (in HD and SD)

D-VITC

Description	Enables/disables the insertion of the embedded timecode (D-VITC) in the SD output.
Values	The values specified for the D-VITC field can be as follows:
	• **No** — No new timecode inserted in the output.
	• **In (default)** — Same timecode as in the input inserted in the output.
	• **LTC** — Timecode from the LTC table inserted in the output.
	• **USER** — User-defined timecode inserted in the output.
	• **TC 0** — All D-VITC timecodes generated in the video signal coming out of the given PGM will remain static and fixed to 00:00:00:00.

Lines

Description	Lines on which the specified timecode must be written on the loop of the input.
Values	From 06-08 to 20-22
Default Values	• 14-16 in NTSC
	• 19-21 in PAL

UserBits

Description	Enables/disables the insertion of the user bits in the SD output. When TC0 is selected for the D-VITC field, the user bits values will also remain static and fixed to 00:00:00:00 whatever the selected value.
Values	Yes (default) / No

CleanVBI

Description	Specifies whether the VBI (Vertical Blanking Interface) information needs to be cleaned on the output. The VITC being recorded in the active video lines, it can be disrupted in play var because of interpolation or parity violation on some fields. Moreover, if the server inserts VITC on the output while there is already VITC on another line, it can create problems.	
Values	• **No (default)**	The VBI is not cleaned in the output.
	• **Always**	The VBI is always cleaned in the output.
	• **If not OK**	The VBI is cleaned in the output if it is not correct (play var mode, vertical split screen, etc).

SMPTE Package Settings

Introduction

The SMPTE Package Management settings specify how ancillary data packets stored in the vertical ancillary data space in HD and SD signals are handled.

These fields are available in the following interfaces:

•   in the Multicam Configuration window, Channels tab, in the advanced display mode:

  ◦   on page 6, 7 or 8 on the server-based application.

  ◦   on page 1 on the web-based interface.

•   partly in the Technical menu of the Remote Control Panel (T2.X).

The following screenshot highlights the SMPTE Package settings area, defined on page 8 of the Channels tab in the server-based application:

```
            CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                    8/9 Advanced Mode
Timecode settings
            LTC      User        Primary TC
CAMA        LTC      VITC        LTC
CAMB        LTC      VITC        LTC

SMPTE 334M packets management
            PGM1      PGM2      CAMA      CAMB
Decoding                        Yes       Yes
Encoding    No        No

Custom 1                        No        No
Custom 2                        No        No




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page      F1:Help
```
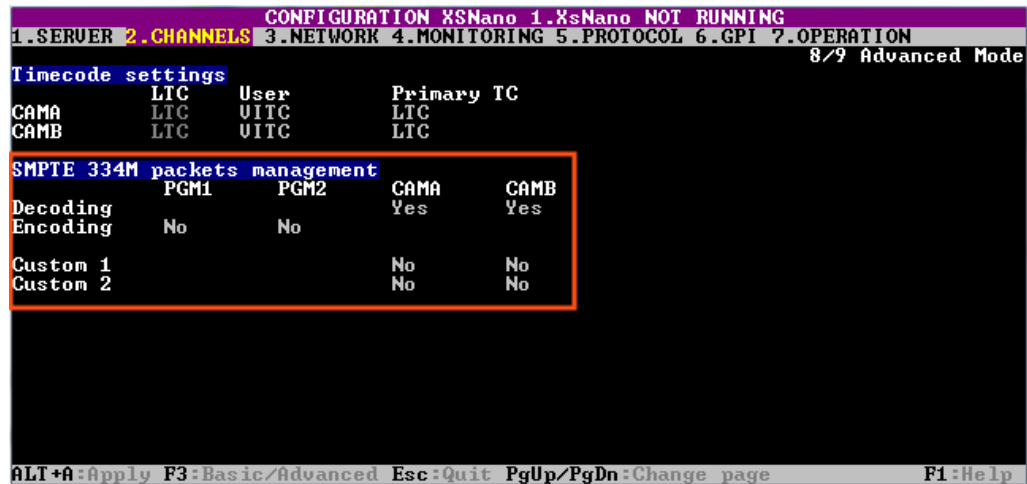
Supported Packets

The supported ancillary data packets shall comply with the SMPTE standards 334M, 291M (type 2 ANC packet).

Up to now, SMPTE 334M data packets carried on the chrominance (C) data stream within the SMPTE 292M signal are not decoded (HD).

All DIDs mentioned in the SMPTE 334M standards are supported:

- 61 => 62

- 40 => 5F

- C0 => DF

Those DIDs are saved and restored on the output channels on their original lines. The other DIDs are not saved.

The maximum number of bytes saved per field (frame for 720p) is 2014. One saved SMPTE 334M packet is composed of user data word (UDW) plus 7 configuration bytes. It has to be taken into account to compute the number of bytes saved.

Please refer to the SMPTE RP 291-2006 standard for the assignment of DIDs to specific applications.

Decoding

Description	Enables/disables the decoding of SMPTE 334M data packets on each record channel.
Values	Yes (default) / No

Encoding

Description	Enables/disables the encoding of the SMPTE 334M data onto each play channel in HD.
Values	Yes / No (default)

Custom 1/2

Description	Enables/disables a customized decoding of the SMPTE 334M data packets. See section "Customizing the Decoding of SMPTE Data" on page 107 for more information.
Values	Yes / No (default)

Customizing the Decoding of SMPTE Data

Upon request, it is possible to customize the decoding of the SMPTE 334M data.

If you wish to keep uncompressed 8-bit data in the VANC data space, you can select two lines - L_a and L_b - on which N_a and N_b bytes can be saved per field (frame for 720p).

The saved data are left aligned after SAV (Start of Active Video) and the maximum number of data saved (N_a + N_b + regular SMPTE 334M packet) must not exceed 2014.

If you require this customization, please contact your EVS representative to specify the number of bytes you want to keep and on which lines. EVS will provide you with a specific customization file.

This customization file will be activated using the Custom 1, Custom 2 settings.

SD OUT Encoding

Description	Enables/disables the encoding of the SMPTE334M data present on the HD output on the SD downconverted output on each play channel. See section "SMPTE 334 Data Encoding on Downconverted Output" on page 107 for more information.
Values	Yes / No (default)

SMPTE 334 Data Encoding on Downconverted Output

For the downconverted output, one SMPTE 334M packet is encoded per line starting from the second line after the line specified for the switching line. In other words, the maximum number of packets per field is as follows:

- 8 packets per field in 525i (lines 12-19 and 275-282)

- 15 packets per field in 625i (lines 8-22 and 321-335)

The limitations are:

- The data are re-encoded in the same order as they were in HD, but not necessarily on the same lines.

- If VITC is inserted in the downconverted output, no SMPTE 334M data will be inserted on the lines carrying the VITC.

3.5. Network Tab

3.5.1. Overview

Network Tab

The Network tab consists of one page in the basic and/or advanced mode in the server-based application. The Network tab includes the settings on the Gigabit Ethernet network, both networks used for the backup and transfer of video and audio data.

No SDTI network is available with an XSnano server. The Net name can however be used.

Setting List

The table below presents the settings of the Network tab. It specifies whether the setting is available:

- in the basic or advanced display mode in the server-based and web-based interfaces
- in the **Technical Setup** menu of the Remote Panel.

Setting Name	Basic	Advanced	Technical Setup
Net Name	X	X	-
Gigabit Ethernet settings	**P1**	**P1**	**T3.X**
IP Address	X	X	X
Subnet Mask	X	X	X
Default Gateway	X	X	X

3.5.2. Net Name

Introduction

No SDTI network is available with an XSnano server.

The Net name can however be useful.

This field is available

- in the Multicam Configuration window, Network tab, in the basic and advanced display mode on page 1 in the server- and web-based interfaces.

The following screenshot shows the Net Name field on page 1 of the Network tab in the server-based application in advanced mode when no SDTI network is available:

```
                    CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                          1/1 Advanced Mode
Net Name

Gigabit Ethernet
                         Port 1              Port 2
IP Address         192.168.011.010     192.168.012.010
Subnet Mask        255.255.255.000     255.255.255.000
Default Gateway    192.168.011.001     192.168.012.001




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page      F1:Help
```
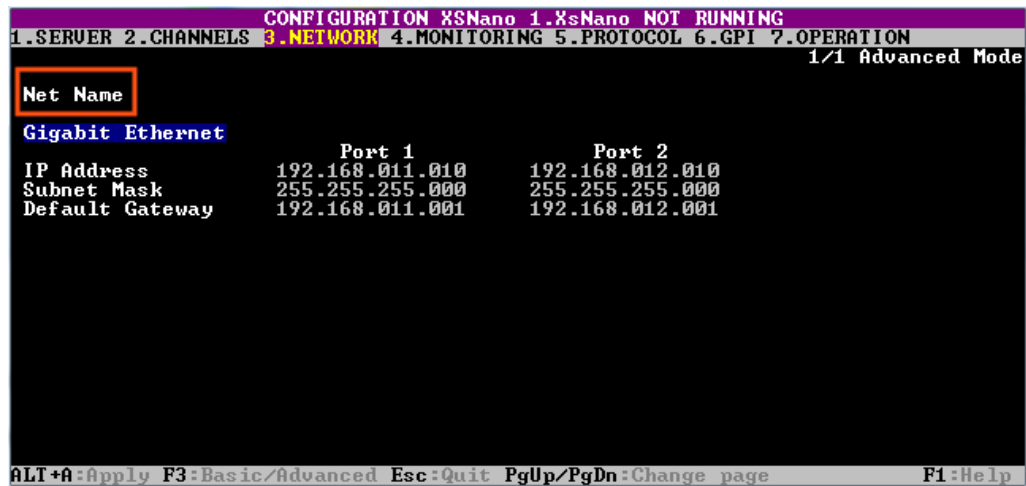
Net Name

Description	Machine name on the SDTI network. It is not mandatory. It can however be useful to easily identify the servers running a given configuration, as it is tied to the running configuration. The Net Name will be displayed even if the SDTI code is not valid.
Values	The Net Name is user-defined and cannot exceed 8 characters.
Default Values	By default, no Net Name is assigned.

3.5.3.   Gigabit Ethernet Settings

Introduction

The **Gigabit Ethernet settings** specify the settings related to the Gigabit Ethernet network. It allows the backup and transfer of the audio and video data without going through the SDTI network.

The Gigabit connection is provided via the H3X or HCTX board. Its backplane is equipped with two Gigabit Ethernet ports. The settings need to be defined on at least one port for the server to be able to operate the Ethernet connection.

When the Gigabit module is not present on the H3X or HCTX board or when the Gigabit connection has been lost, the first line of the Gigabit Ethernet settings will display the message !Not detected!.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Network tab, in the basic and advanced display modes on page 1 in the server- and web-based interfaces.

- in the Technical menu of the Remote Control Panel (T3.X).

⚠ **Warning**

Changes to the Gigabit Ethernet parameters require an application reboot (**ALT+Q** from the operational windows) to be applied.

The following screenshot highlights the Gigabit Ethernet settings, defined on page 1 of the Network tab in the server-based application:
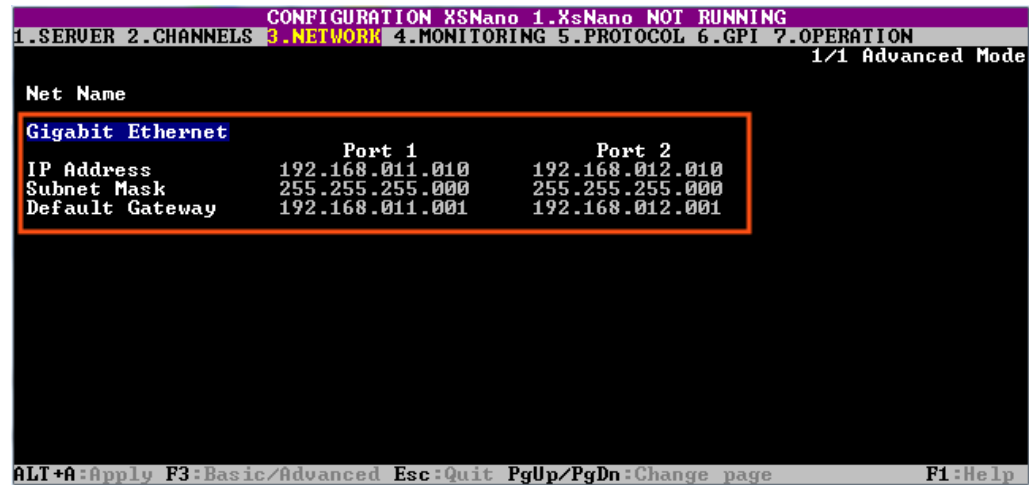
IP Address (Port 1/Port 2)

Description	IP address to connect to the port #1/port #2 of the Gigabit Ethernet connection on the EVS server.
Values	The IP addresses 0.0.0.0 and 255.255.255.255 are not allowed.

Subnet Mask (Port 1/Port 2)

Description	Range of logical addresses within the address space assigned to the Gigabit Ethernet connection. The IP addresses of both GigE ports must belong to different subnet masks. Otherwise, it would return an error message.

Default Gateway (Port 1/Port 2)

Description	IP address of the router on the Gigabit Ethernet network that serves as an access point to external networks.

3.6.   Monitoring Tab

3.6.1.   Overview

Monitoring Tab

The Monitoring tab consists of one page in basic mode (there are no advanced parameters) in the server-based application. The Monitoring tab includes the settings of the Multiviewer output, the OSD information to be displayed, and the downconverted outputs configuration.

Setting List

The table below presents the settings of the Monitoring tab. It specifies where the setting groups are available (page) and whether each setting is available:

- in the basic and advanced display mode in the server-based and web-based interfaces
- in the **Technical Setup** menu of the Remote Panel.

Setting Name	Basic & Advanced	Technical Setup
OSD Settings	**P1**	**T4.1**
Genlock Error	X	X
Disk Error	X	X
Downconverted Outputs Settings	**P1**	**T4.2**
Char OUT J4	X	X
J1	X	X
OUT B J3	X	X
Aspect ratio	X	X
SD Edge Enh.	X	X
REC HD->SD Low latency	X	X

3.6.2. OSD Settings

Introduction

The **OSD settings** allow specifying the settings related to the OSD and information to be displayed on the monitoring screen.

These fields are available in the following interfaces:

• in the Multicam Configuration window, Monitoring tab.

• in the Technical menu of the Remote Control Panel (T4.1).

The following screenshot presents the settings page of the Monitoring tab in the server-based application and highlights the OSD settings area:
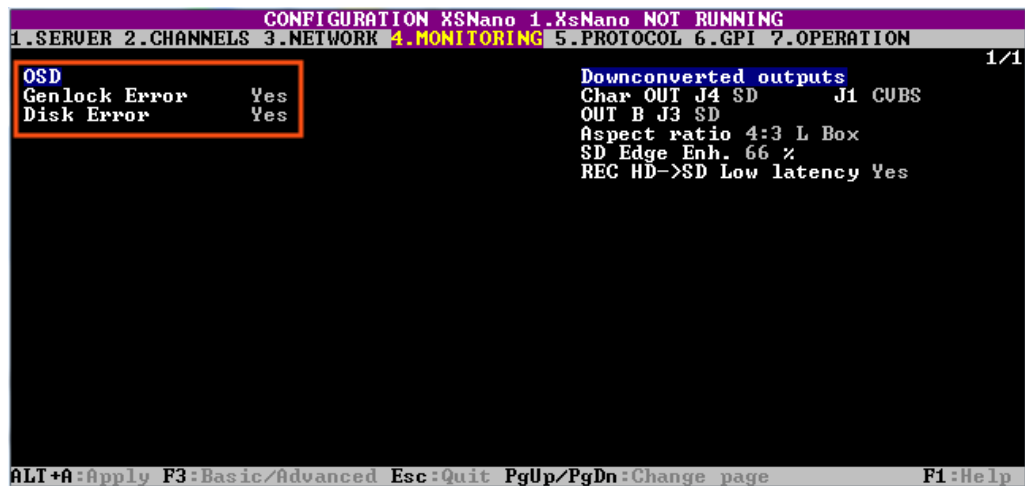
Genlock Error

Description	Enables or disables the Genlock information display on the output monitor. If the Genlock reference is not correct, the **!GkV** message appears on the output monitor.
Values	**Yes** (default) / **No**

Disk Error

Description	Enables or disables the disk error information display on the output monitor.
	As the server is equipped with a RAID disk array, the operation can continue seamlessly even with 1 faulty disk. If 1 disk is disconnected during operation, the **!Raid** message appears on all output monitors, and another message appears when the operator shuts down the application, to invite him to replace the disk and rebuild the RAID array.
	Please, refer to the Technical Reference manual for details on the RAID system and its maintenance.
Values	**Yes** (default) / **No**

3.6.3. Downconverted Outputs Settings

Introduction

The **Downconverted outputs settings** allow specifying the settings related to the downconverted output lines and the downconverter parameters.

These fields are available in the following interfaces:

•   in the Multicam Configuration window, Monitoring tab.

•   in the Technical menu of the Remote Control Panel (T4.2).

The following screenshot presents the settings page of the Monitoring tab in the server-based application and highlights the Downconverted outputs settings area.
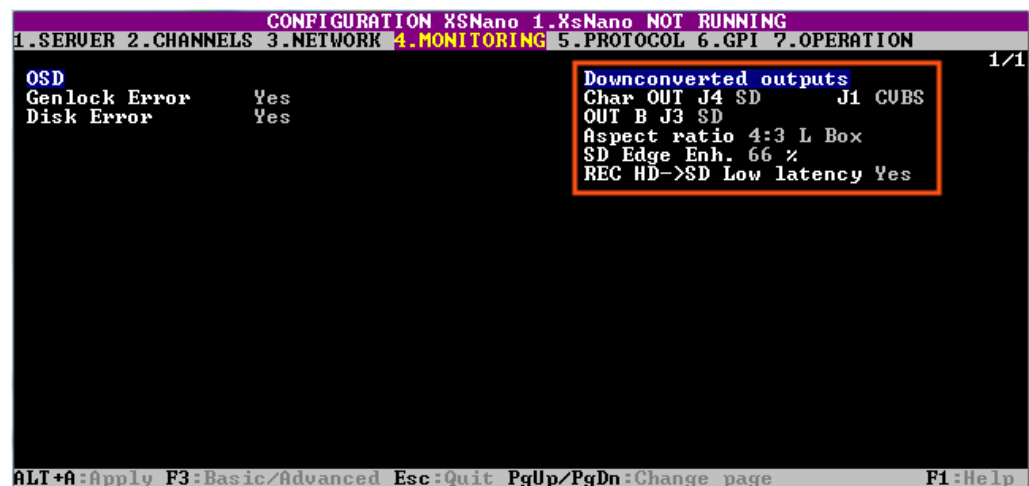
Char OUT J4

Description	Specifies the monitoring output type generated on the J4 connector.
Values	• **SD** • **HD**
Default value	System dependent

Char OUT J1

Description	Specifies the monitoring output type generated on the J1 connector.
Value	• **CVBS**

OUT B J3

Description	Specifies the output type generated on the J3 connector.
Values	• **SD** • **HD**
Default value	System dependent

Aspect ratio

⚠ **Warning**

A change to this parameter requires an application reboot (**ALT+Q** from the operational windows) to be applied.

Description	Defines the frame ratio.
Values	• **4:3 L Box** • **4:4 crop** • **16:9**
Default value	**4:3 L Box**

SD Edge Enh.

Description	Defines the edge enhancer strength used when generating the SD downconverted output video.
Values	**0** to **100**
Default value	**66**

REC HD->SD Low latency

Description	Prevents the downconverted output of the record channels from being delayed. This parameter is only useful on a Hi-Lo configuration when the same signal is sent from a HD to a SD server.
Values	**Yes** (default)/ **No**

3.7.   Protocol Tab

3.7.1.   Overview

Protocol Tab

The Protocol tab consists of 3 pages in the basic mode and 4 pages in the advanced mode in the server-based application. The Protocol tab includes the settings that will be used with the Sony BVW75 protocol and the EditRec feature.

Setting List

The table below presents the settings of the Protocol tab. It specifies whether the setting is available:

- in the basic or advanced display mode in the server-based and web-based interfaces
- in the **Technical Setup** menu of the Remote Panel.

Setting Name	Basic	Advanced	Technical Setup
Sony BVW Settings	**P1**	**P1**	**T5.2**
FFW/REW speed	X	X	X
Use guardband	X	X	X
List Remote CAM	X	X	X
SONY Parallel Status	X	X	X
RS422 VarID Settings	–	**P4**	–
Uniqueness	–	read only	–
Length	–	read only	–
Format	–	read only	–
VDCP visibility Settings	–	**P4**	–
Port #1…6	–	read only	–

3.7.2.   Clip Identifiers

LSM ID

The LSM ID is a clip identifier based on the EVS video server structure.

The LSM ID is made up of 3 digits and 1 letter, for example 112B, where the digits and letter represent the following elements in the server structure:
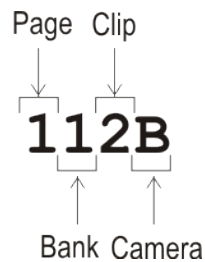
UmID

The UmID is an 8-bytes ID with fixed length.

VarID

The VarID is a 32-bytes ID with variable length and format.

The following VarID parameters need to be set up:

•   Length (8 bytes, 32 bytes)

•   Format (ASCII, binary)

•   Uniqueness level (local = server level, global = network level)

•   Protocol visibility (list of Net Numbers of the servers)

3.7.3.   Sony BVW Settings

Introduction

The **Sony BVW settings** allow specifying the settings that will be used with the Sony BVW75 protocol.

These fields are available in the following interfaces:

•   in the Multicam Configuration window, Protocol tab, on page 1 in the basic and advanced display mode in the server- and web-based interfaces.

•   in the Technical menu of the Remote Control Panel (T5.X).

> ⚠️ **Warning**
> The Sony BVW settings are only available if the license code 118, required to work with the Sony protocol, is valid.

The following screenshot presents page 1 of the Protocol tab in the server-based application and highlights the Sony BVW settings area.

```
         CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERVER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                                     1/2 Advanced Mode
Sony BVW
FFW/REW speed          50X
Use guardband          No   (Clip Pre/PostRoll)
List Remote CAM        No
SONY Parallel Status   Yes




ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page    F1:Help
```
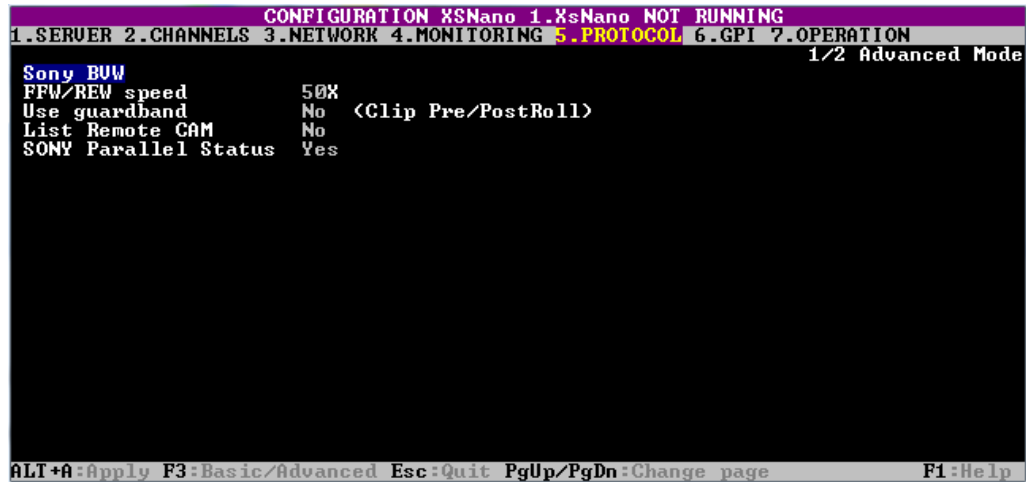
FFW/REW speed

Description	Specifies the speed used by the protocol for forward and rewind operations.
Values	**2** to **50** times the normal speed
Default value	**50**

Use guardband

Description	Makes the OUT guardband available to the protocol.
Values	• **Yes**, meaning that the protocol has access to the IN and OUT guardbands. • **No**, meaning that the protocol has only access to the IN guardband.
Default value	**No**

List Remote CAM

Description	Allows access to the CAM recorders of the remote server specified in the XNet field.
Values	• **Yes**, meaning that the recorders of the local server and the remote server are available. • **No**, meaning that only the recorders of the local server are available.
Default value	**No**

SONY Parallel Status

Description	Activates the Sony serial connection status reporting when several controllers are used in parallel mode.
Values	**Yes / No**
Default value	**Yes**

3.7.4.   RS422 VarID Settings

Introduction

The **RS422 VarID settings** and the **VDCP visibility settings** display the read-only VarID settings.

These fields are available in the following interfaces:

• in the Multicam Configuration window, Protocol tab, on page 2 in the advanced display mode in the server- and web-based interfaces.

⚠ **Warning**
The VDCP visibility settings are only available if the license code 119, required to work with the VDCP protocol, is valid.

The following screenshot shows the RS422 VarID and the VDCP visibility settings areas, available in the Protocol tab, in advanced mode:

```
        CONFIGURATION XSNano 1.XsNano NOT RUNNING
1.SERUER 2.CHANNELS 3.NETWORK 4.MONITORING 5.PROTOCOL 6.GPI 7.OPERATION
                                            2/2 Advanced Mode
RS422 UarID
Uniqueness  Local
Length      32
Format      ASCII

VDCP visibility

Port #1 :    01;

Port #2 :    01;

Port #3 :    01;

Port #4 :    01;

Port #5 :    01;

Port #6 :    01;


ALT+A:Apply F3:Basic/Advanced Esc:Quit PgUp/PgDn:Change page        F1:Help
```

VarID Definition and Parameters

The VarID is a 32-bytes ID with variable length and format. The VarID settings enable VDCP protocol to use the VarID to access the clip IDs on a server.

This page in the Multicam Configuration menu only displays the parameter values. These values are extracted from the 'varid.ini' file and can only be changed by editing this external file. In case of error or undefined values, the corresponding parameter default value is used.

VarID Configuration File

The VarID parameters are defined in a configuration file. This file, named `varid.ini`, is located in the `C:\LSMCE\DATA` directory.

The file has the following syntax:

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
; VARID settings
;----------------------------
;Parameter values and [default]
;
; Uniqueness= [Local] or Global
; Length= [32] or 8
; Format= [ASCII] or Binary
; Visibility= [], 1..29,*
;           default= empty is converted to local XT Net
number
;           * for all XNet
;
;----------------------------
Uniqueness=Local
Length=32
Format=ASCII
1=
2=
3=
4=
5=
6=
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
```

Uniqueness

Description	This field is not relevant on this type of server.
Value	The value is forced to 'Local', which means that the VarID is unique at the server level.

Length

Description	Specifies whether the VarID has a fixed length of 8 bytes or a variable length of 32 bytes.
Values	• **8**, fixed length. • **32**, variable length.
Default value	**32**

Format

Description	Specifies whether the VarID has an ASCII or binary format.
Values	• **ASCII** • **Binary**
Default value	**ASCII**

VDCP Visibility

Description	This field is not relevant on this type of server.
Value	The value is forced to the default value, but is not taken into account.

3.8.   GPI Tab

3.8.1.   Overview

GPI Tab

The GPI tab consists of one page in basic mode (there are no advanced parameters) in the server-based application. The GPI tab includes the settings of the GPI inputs and outputs signals.

Setting List

The table below presents the settings of the GPI tab. They specify where the setting groups are available (page) and whether each setting is available:

- in the server-based and web-based interfaces
- in the **Technical Setup** menu of the Remote Panel.

Setting Name	Basic & Advanced	Technical Setup
GPI Settings	**P1**	**T6.1 to T6.6**
TTL GPIs set as GPIs	X	T6.1
GPIs IN		
Channel/Device	X	T6.2 to T6.3
Port	X	T6.2 to T6.3
Function	X	T6.2 to T6.3
Delay	X	T6.4
GPIs OUT		
Function	X	T6.5
Type	X	T6.5
Advance	X	T6.6
Pulse duration	X	T6.6
Tally Settings	**P1**	**T6.7**
Tally	X	X
Add Clip to PL	X	X
Clips guardbands	X	X

3.8.2.   GPI Settings

Introduction

The **GPI Settings** allow specifying the settings related to the GPI inputs and outputs features.

These fields are available in the following interfaces:

- in the Multicam Configuration window, GPI tab.

- in the Technical menu of the Remote Control Panel (T6.X).

The following screenshot presents the settings page of the GPI tab in the server-based application and highlights the GPI Settings area.
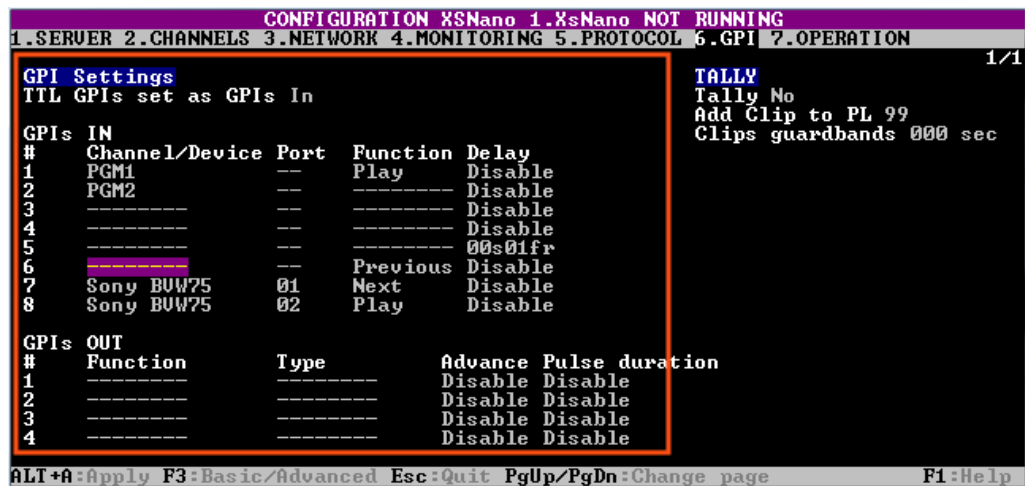
> **Note**
>
> If the **TTL GPIs set as GPIs** parameter is set to **In**, then the display looks like the illustration above with 8 **GPIs IN** and 4 **GPIs OUT** lines.
>
> If it is set to **Out**, then the display is reorganized to expose 4 **GPIs IN** and 8 **GPIs OUT** lines.

GPI Types and Functions

There are 3 types of GPIs available to be used on the servers:

- The input lines 1 to 4 are opto-isolated inputs.

- The output lines 1 to 4 are relay outputs.

- The GPIs TTL lines can be configured as 4 TTL inputs or 4 TTL outputs, in both cases numbered from 5 to 8.

According to the protocol you are using, the following functions are available and can be assigned to the GPIs lines as described hereunder in the **Function** parameter.

- **Sony**: Play, Pause, Recue, Previous, Next, Skip.

- **DD35**: Play, Pause, Recue, Previous, Next, Skip.

- **Odetics**: Play, Pause, Recue, Next.

- **VDCP**: Play, Pause, Recue, Previous, Next, Skip.

> **Note**
>
> For all protocols, use the channel assignment (PGM1 to PGM4) instead of the device protocol type (Sony BVW75, Odetics).

TTL GPIs set as GPIs

Description	Defines the 4 configurable GPIs as inputs or outputs.
Values	**In** / **Out**
Default value	**In**

GPIs IN - Channel/Device

Description	Specifies the server channel or the external device connected to the corresponding GPI input line, and therefore to which channel or device the GPI will be sent to.
Values	The following values are possible and correspond to one of the channels or controllers assigned in the Channel and Control settings (Channels tab, page 1): • **PGMx**: The GPI is sent to the specified play channel. • **RECx**: The GPI is sent to the specified record channel. • **RMTx**: The GPI is sent to the remote controller. • **<Protocol Name>**: The GPI is sent to the third-party controlling device.

GPIs IN - Port

Description	Specifies the RS422 port on which the server will receive the input signal. This setting is relevant when the device is an EVS remote controller or third-party controller.
Values	The possible values are from 1 to 6: it corresponds to the RS422 port to which the controller specified in the **Channel/Device** field is assigned in the Port settings (Channels tab, page 1).

GPIs IN - Function

| Description	Specifies the function associated to the GPI input line. According the configured protocol some or all of the functions described below are available.
Values	• **Play**: sends a play command at 100% speed on the selected channel. • **Pause**: sends a pause command on the selected channel. • **Recue**: sends a jump to the IN point of the on air element on the selected channel. (If this is a playlist, the jump is performed to the IN point of the first clip of the playlist.) • **Previous**: sends a command to go to the previous clip of a playlist on the selected channel. • **Next**: sends a command to go to the next clip of a playlist on the selected channel. • **Skip**: sends a command to skip the clip being played on the selected channel. • **Tally**: activates or deactivates the on-air flag on the selected channel. (This GPI is only used by IPDirector.) • **Mark IN**: sets an IN point on the corresponding record channel. • **Mark OUT**: sets an OUT point on the corresponding record channel. • **Mark Tly**: sets an IN and an OUT points on record trains based on changes in camera angles of the director's cut. An IN point is set on the train to which the director switches and an OUT point is set on the train that the director leaves. • **Exit ASP**: sends a command to exit the loop as soon as possible without playing the current element until its end then jump to the selected element. (This GPI is used with playlists in IPDirector.) • **Exit OUT**: sends a command to exit the loop as soon as the OUT point of the current element is reached then jump to the selected element. (This GPI is used with playlists in IPDirector.) • **None**: no value is defined.
Default value	**None**

GPIs IN - Delay

Description	Specifies the time (number of seconds and/or frames) that the server will wait after receiving the input signal before executing the input-related function.
Values	• **00s00fr** to **02s00fr** • **Disable**
Default value	**Disable**

GPIs OUT - Function

Description	Specifies the function that activates the output line.
Values	The following functions can be triggered by a GPI OUT: • **Replace**

GPIs OUT - Type

Description	Specifies the type of GPI output signal that will trigger the specified function.
Values	The following values are possible: • **close** The level changes to high level at activation. • **close pulse** A rising edge pulse is generated at activation. • **open** The level changes to low level at activation. • **open pulse** A falling edge pulse is generated at activation.

GPIs OUT - Advance

Description	Defines the time (number of seconds and/or frames), at which the output will be generated ahead of the timecode linked to the output line.
Values	• **00s00fr** to **02s00fr** • **Disable**
Default value	**Disable**

GPIs OUT - Pulse duration

| Description	Defines the pulse duration (number of seconds and/or frames) for pulse type output lines.
Values	• **00s00fr** to **02s00fr** (2fr steps) • **Disable**
Default value	**Disable**

3.8.3. Tally Settings

Introduction

The **Tally settings** allow specifying the settings related to the tally feature. This feature allows the user to automatically create a clip for each change of camera performed with the Director's Cut and to add these clips to a playlist. The clips are created automatically by the server as it receives GPIs IN signals from a switcher when the director changes the camera angle.

These fields are available in the following interfaces:

• in the Multicam Configuration window, GPI tab.

• in the Technical menu of the Remote Control Panel (T6.X).

The following screenshot presents the settings page of the Monitoring tab in the server-based application and highlights the Tally settings area.
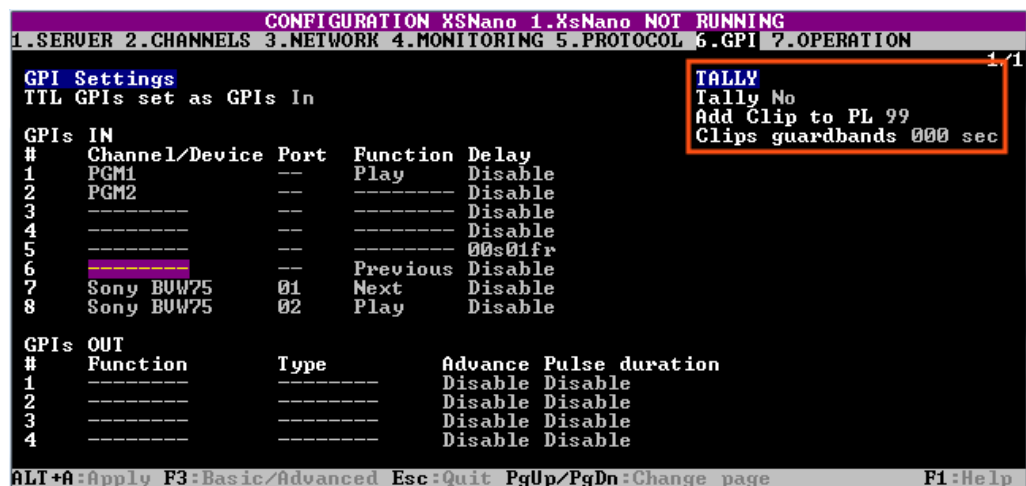
How to Activate the Tally Function

To use the tally function, proceed as follows:

1. Activate it using the **Tally** parameter.

2. Go to the GPIs IN settings area and select the GPI IN used for the tally control.

3. Set the Channel/Device on the REC on which the Director's Cut is performed.

4. Set the function as **Mark Tly**.

The tally function is now active, and works as follows:

When the server receives a 'Mark tally' GPI IN, an IN point is marked on the corresponding record train (for ex. cam a). When a second 'Mark Tally' GPI IN is received on a different record train (for ex. cam b), the server marks an OUT point on the first record train (cam a) and an IN point on the second record train (cam b). All the clips created this way are added to the defined playlist.

Tally

Description	Activate or deactivate the tally function.
Values	**Yes/No**
Default Value	**Yes**

Add Clip to PL

Description	Selects the LSM ID of the playlist to which the tally clips will be added.
Values	**10** to **99**
Default Value	**99**

Clips guardbands

Description	Specifies the guardbands length of the tally clips, in seconds.
Values	**0** to **250**
Default Value	**0**

3.9. Operation Tab

3.9.1. Overview

Operation Tab

The Operation tab consists of six pages in the basic mode in the server-based application. No advanced mode is available in this tab. The Operation tab includes all operational settings.

Setting List

The table below presents the settings of the Operation tab. They specify where the setting groups are available (page) and whether each setting is available:

- in the basic or advanced display mode in the server-based and web-based interfaces. In the web-based interface, the settings are all displayed on one page.

- in the **Operational Setup** menu of the Remote Panel.

OSD Settings

Setting Name	Basic	Operational Setup
OSD settings	**P1**	**1.1**
Cue Number on OSD	X	X
OSD on outputs	X	X
OSD on inputs	X	X
Background	X	X
Audio meters OSD settings	**P1**	**1.2**
Audio Meters	X	X
DB Adjust	X	X
Style	X	X
Thickness	X	X

Clips Settings

Setting Name	Basic	Operational Setup
Clips settings	**P1 to P2**	**2.x**
Automake clip for cam A/B/C/D	P1	X
Guardbands	P1	X
Default clip duration	P1	X
Autoname clips	P1	X
Clip post-roll	P1	X
Mark cue points	P1	X
Preroll	P1	X
Record trains OUTs	P1	X
Default copy/move	P1	X
Freeze on cue points	P2	X
Protocol Receive page	P2	X
Playlist Receive page	P2	X

Playlist Settings

Setting Name	Basic	Operational Setup
Playlist settings	**P2**	**3.x**
Video effect duration	X	X
Wipe type	X	X
Default playlist speed	X	X
Insert in playlist	X	X
Confirm Ins/Del clips	X	X
Playlist loop	X	X
Playlist auto fill	X	X
Fade to/from color	X	X
Load playlist	X	X

Miscellaneous Settings

Setting Name	Basic	Operational Setup
Protection settings	**P3**	**5.1**
Protect pages	X	X
Confirm delete clips/playlists	X	X
Push settings	**P3**	**7.1**
Push target	X	X
Push target 1/2	X	X
Push mode	X	X
Push receive page	X	X
Audio settings	**P3**	**8.1**
Audio slow motion	X	X
Lipsync value	X	X
Aux track output	X	X

Controller Settings

Setting Name	Basic	Operational Setup
Controller settings	**P4**	**9.X**
Effect duration for take	X	X
Fast jog	X	X
Second lever range	X	X
Recall clip toggle	X	X
Record key	X	X
VGA & Remote sync	X	X
PGM/PRV mode	X	X
Internal loop mode	X	X

3.9.2.   OSD Settings

Introduction

The OSD settings allow users to specify which and how the information will be displayed on the OSD.

These fields are available in the following interfaces:

• in the Multicam Configuration window, Operation tab, in the basic display mode on page 1 on the server- and web-based interfaces.

• in the Operational menu of the Remote Control Panel (1.1).

The following screenshot presents page 1 of the Network tab in the server-based application, where the OSD settings are available, and highlights the OSD settings area:
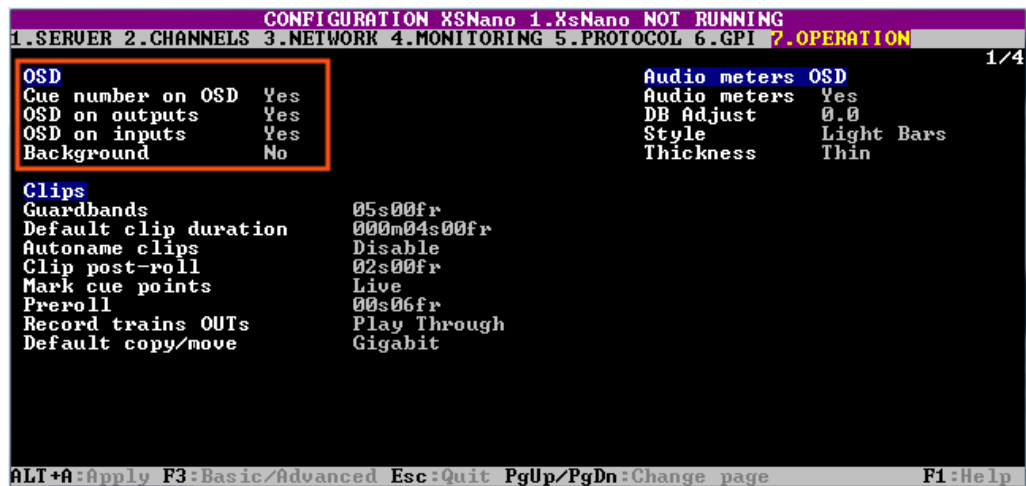
Cue number on OSD

Description	Enables / disables the display of the cue point number on the OSD of the output monitors when a cue point is recalled inside a record train.
Values	Yes (default) / No

OSD on outputs

Description	Enables / disables the OSD on the play channels.
Values	Yes (default) / No

OSD on inputs

Description	Enables / disables the OSD on the record channels.
Values	Yes (default) / No

Background

Description	Applies a dark gray background to the OSD display.
Values	Yes / No (default)

3.9.3. Audio Meters OSD Settings

Introduction

The Audio Meters OSD settings allow users to specify whether and how the audio meters are to be displayed on the OSD.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Operation tab, in the basic display mode on page 1 on the server- and web-based interfaces.

- in the Operational menu of the Remote Control Panel (1.2).

The following screenshot presents page 1 of the Operation tab in the server-based application, where the Audio Meters OSD settings are available, and highlights this settings area:
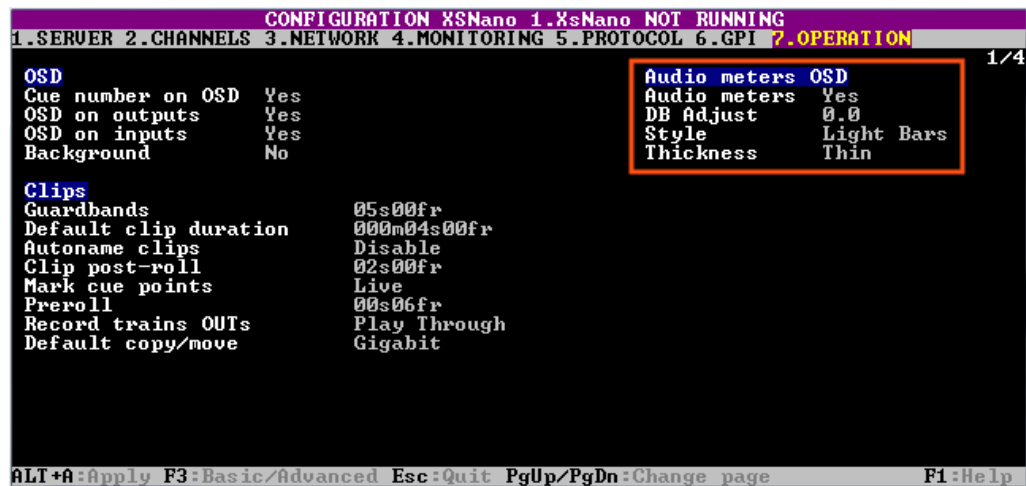
Audio meters

Description	Shows/hides the audio meters on the OSD.
Values	Yes / No
Default value	Yes

DB Adjust

Description	Adjusts the value of the displayed audio meters.
Values	From - 83.2 to 0.0 dB, with a variable increments (larger in low values, and smaller with increasing values)
Default value	0.0

Style

Description	Specifies the style of the audio meters
Values	Light Bars , Glowing Boxes , Dark Boxes , Light Boxes , Dark Bars
Default value	Light Bars

Thickness

Description	Specifies the thickness of the audio meters
Values	Thin, Medium, Thick
Default value	Thin

3.9.4.   Clips Settings

Introduction

The Clips settings relate to various aspects of the clip management: clip definition, storage location, metadata, and cue points.

The Clips settings are available in the following interfaces:

- in the Multicam Configuration window, Operation tab, in the basic display mode:
  - on pages 1 and 2 on the server-based application
  - on page 1 on the web-based interface.
- in the Operational menu of the Remote Control Panel (2.X).

The following screenshot presents pages 1 and 2 of the Operation tab in the server-based application, where the Clips settings are available, and highlights the Clips settings area:
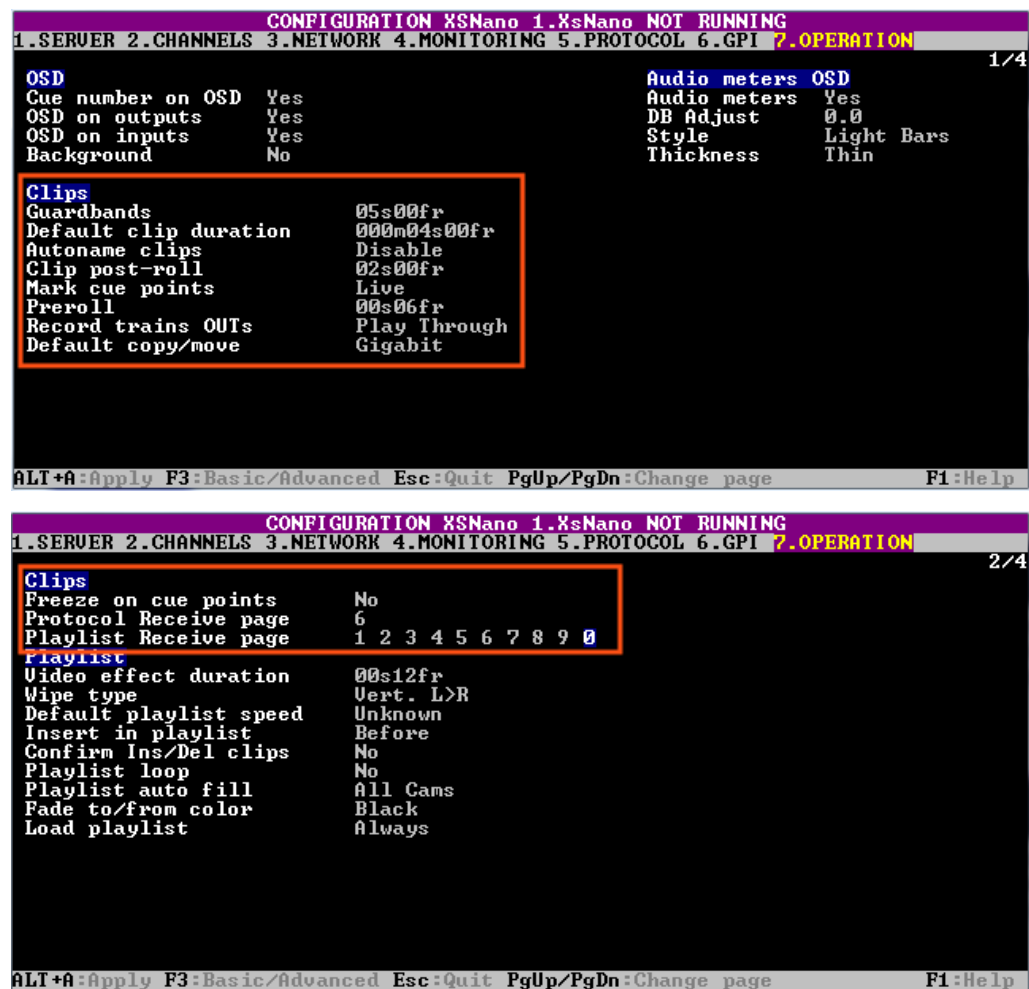
Automake clip for CAM A/B/C/D

Availability	This parameter is only displayed in XSense configurations.
Introduction	When creating clips, the clip corresponding to the camera on which IN/OUT points have been marked are always saved. It is possible to save automatically the same action on the other cameras. Only cameras letters applicable to the logical channels are displayed.
Description	Specifies that clips have to be created on the given camera (A, B, C, D) even if no IN or OUT point has been marked on that camera.
Values	Yes / No
Default value	Yes

Guardbands

Description	Specifies the amount of A/V material that remains available before and after a clip (called 'guardbands') when the clip is created.
Values	From 00s00fr to 60s00fr
Default Value	05s00fr

Default clip duration

Description	Specifies the duration of clips created with only one reference point (IN or OUT point).
Values	Disable, or from 00s01fr to 4h. When set to 'Disable', both IN and OUT points are required to be able to create a clip. The duration can be set: • With second granularity up to 1 minute • With minute granularity from 1 minute up to 4 hours.
Default value	04s00fr

Autoname clips

Description	If this function is enabled, the value of the selected field will automatically be used to name the clip upon creation.
Values	The values from the following fields can be used to automatically name clips: • **Disable:** No name is assigned to a clip when it is created. • **TC IN:** The timecode of the IN point of the clip is automatically assigned to a clip when it is created. • **CAM Name:** The name of the record channel is automatically assigned to a clip when it is created. • **ID Louth:** The ID Louth of the clip, i.e. the unique identifier for the clip on the XNet network, is assigned to a clip when it is created. • **VarID 32:** The VarID of the clip is assigned to a clip when it is created. When this option is selected, the VarID used to assign a name to the clip will be limited to the first 8 characters of this field.
Default value	Disable

Clip post-roll

Description	When the Post-Roll function is enabled from the secondary clip menu, the clip will play through its OUT point for the duration defined by the Clip post-roll parameter. This is also valid inside record trains if the Record Train OUTs parameter is set to 'Freeze'.
Values	From 00s00fr to 30s00fr
Default value	02s00fr

Mark cue point

Description	Specifies how the cue point timecode will be memorized.

Values	Two values are possible for this parameter:
	• **Live:**
	  Memorizes cue points based on the timecode of the LIVE input.
	• **Playback:**
	  Memorizes cue points based on the timecode of the field loaded on the main play channel.

Default value	Live

Preroll

Description	Preroll duration used when recalling a cue point.
Values	From 0s01fr to 5s00fr.
Default value	0s05fr

Record trains OUTs

Description	Specifies whether Multicam will freeze or play through when it reaches an OUT point marked on the record train that is being played back.

Values	Two values are possible for this parameter:
	• **Play through:**
	  Multicam will still countdown to the OUT point, but will keep playing through this point.
	• **Freeze:**
	  Multicam will countdown to the OUT point and will automatically freeze:
	  ◦ on that picture if the Post-Roll mode is disabled
	  ◦ on that picture + the Post-Roll duration if the Post-Roll mode is enabled.
	When playing a clip, Multicam always freezes on the OUT point (or OUT point + Post-Roll duration when Post-Roll mode is enabled).

Default value	Play through

Default copy/move

Description	Specifies whether the copy operations should be executed preferably using the SDTI or the Gigabit network.
Values	The value is forced to Gigabit for this parameter on an XSnano server. • **Gigabit:** The copy operations are executed via the GigE interface.

Freeze on cue points

Description	Specifies whether Multicam will freeze or not when it reaches a cue point marked on the record train that is being played back. The Post-Roll parameter is not taken into account for this functionality.
Values	Yes / No When playing record trains where cue points have been marked, the playout freezes on the cue point if the parameter is set to "Yes". It plays through if the parameter is set to "No".
Default value	No

Protocol Receive page

Description	Specifies on which page the clips created by protocols are stored. When a page is full, clips are stored on the next page. Only clips created on this page (and the other protocol pages if the first page is full) are visible for protocols.
Values	1 to 10 (=0)
Default value	6

Playlist Receive page

Introduction	This setting is linked to the copy function that allows users to automatically create a local copy of all network clips when copying a local or network playlist. For details, refer to the description of the Playlist copy function in the Operations manual.
Availability	The setting is only available if the license code 111 is valid.
Description	Specifies on which page(s) of your EVS server the clips received when using the PLST+CLIPS copy function must be stored. Clip pages can be assigned simultaneously as PUSH and PLST Receive Pages.
Values	1 to 10 (=0)
Default value	0 (page 10)

3.9.5.   Playlist Settings

Introduction

The Playlist settings relate to various aspects of playlist management and effects.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Operation tab, in the basic display mode:
  - on page 2 on the server-based application.
  - on page 1 on the web-based interface.
- in the Operational setup menu of the Remote Control Panel (3.X).

The following screenshot presents page 2 of the Operation tab in the server-based application, where the Playlist settings are available, and highlights the Playlist settings area:
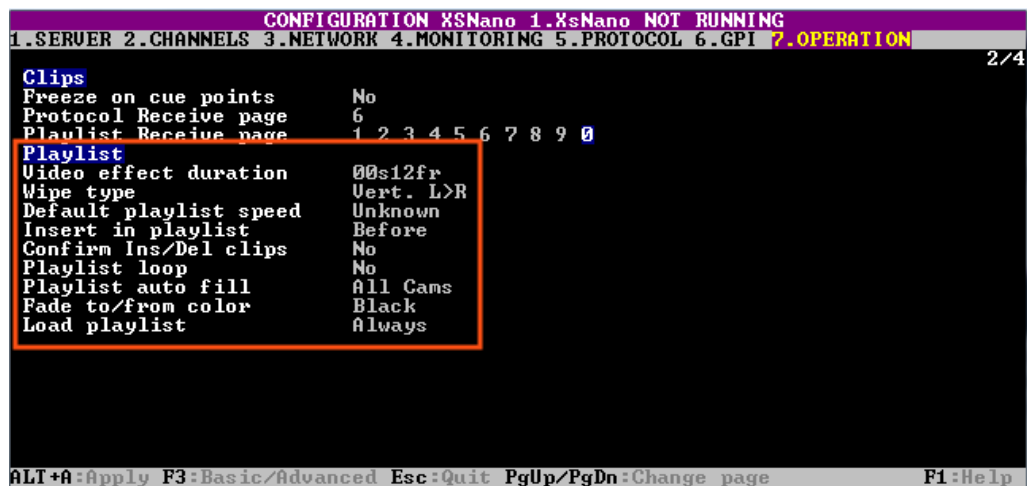
Availability

The Playlist settings are only available if the license code 111 is valid.

On an XSnano server, the license code 111 is only allowed with an XSense configuration.

You can also create and manage playlist exclusively via protocols. In this case, the playlist settings will not be available, and all playlist-related parameters will be defined by the controlling application or device.

Video effect duration

Description	Sets the duration of video transition effect. The specified value is used as default value in the Playlist Edit mode.
	Note that the duration of the video transition when using the **TAKE** button in 1PGM+PRV mode has its own parameter, **Effect for take**, defined in the EVS Controller section of the Operation tab.
Values	0s00fr to 20s00fr
Default value	00s10fr

Wipe type

Description	Specifies the vertical wipe effects from Left to Right or from Right to Left.
Values	Vert. L>R / Vert. R>L
Default value	Vert. L > R

Default playlist speed

Description	Defines the default speed used to play clips in a playlist.
Values	The following values are possible Unknown, and from 0% to 100%:
	• **Unknown** means that the speed of the previous clip in the playlist will be used as a reference for the current clip.
	• **0%** will force the playlist to pause at the end of each clip.
	• **1% to 100%** will apply the specified speed as default speed for playlist elements.
Default value	Unknown

Insert in playlist

Description	Specifies if the clips add to a playlist are insert before or after the active clip in the playlist.
Values	After / Before
Default value	Before

Confirm Ins/Del clips

Description	Specifies whether a confirmation will be required each time the operator wants to add a clip to the playlist or remove a clip from the playlist.
Values	Yes / No
Default value	No

Playlist loop

Description	Specifies whether the playlists in play mode will be looped and played back continuously.
Values	Yes / No
Default value	No

Playlist auto fill

Description	Specifies which camera angles will be added to the playlists when using the **Fill Playlist (F9)** function from the main menu of the Remote Panel.
Values	The following values are possible: • **All Cam:** The clips for all camera angles will be added to the playlist. • **Prim+Sec:** The clips corresponding to the primary and secondary camera angles will be added to the playlist. • **Primary:** The clips corresponding to the primary camera angles will be added to the playlist. • **Secondary:** The clips corresponding to the secondary camera angles will be added to the playlist. • **Cam A, Cam B, Cam C, Cam D** The clips corresponding to the defined camera angle will be added to the playlist.
Default value	All Cam

Fade to/from color

Description	Specifies the color that is used in the transition effects 'fade to color', 'fade from color' and 'fade to/from color' (V fade).
Values	Black / White
Default value	Black

Load Playlist

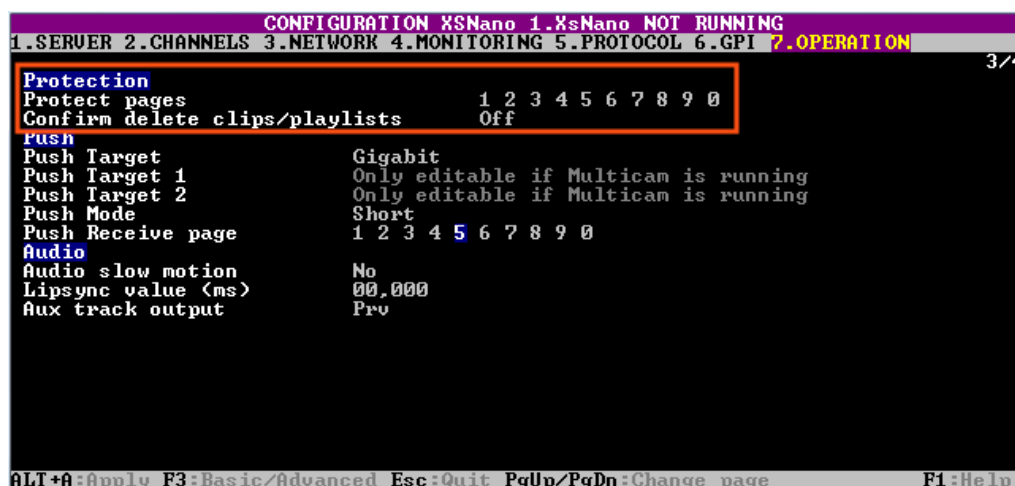| Description	This parameter is only used in 2PGM or 3PGM mode.
Values	The following values are available: • **Always:** This always loads the selected playlist in PGM/PRV mode. • **Conditional:** This loads the selected playlist on the selected PGM only if only 1 channel is active when entering the Playlist Edit mode. It allows loading and playing multiple playlists using a single Remote Panel.
Default Value	Always

3.9.6.   Protection Settings

Introduction

The Protection settings aim at protecting clips stored on the EVS server from deletion.

These fields are available in the following interfaces:

- in the Multicam Configuration window, Operation tab, in the basic display mode:
  - on page 3 on the server-based application.
  - on page 1 on the web-based interface.
- in the Operational setup menu of the Remote Control Panel (5.1).

The following screenshot presents page 3 of the Operation tab in the server-based application, where the Protection settings are available, and highlights the Protection settings area:

Protect pages

Description	Specifies the pages on which the clips stored are protected from accidental deletion.
	The clips stored on these pages are also protected when using the **Clear All Clips (F7)** function from the main menu of the Remote Panel.
	See section "Navigating and Editing in the Multicam Configuration Window" on page 47 for more information on how to enable pages.
Values	Page 1 to 10 (=0). Several pages can be selected.

⚠️ **Warning**

When the option **Clear Video Disks** is selected in the Multicam Setup window of the server-based application, all clips are deleted, including the protected ones.

Confirm delete clips/playlists

Description	Enables a confirmation request when users delete clips, playlists or in both situations.
Values	The following values are possible: • **Off:** Clips and playlists are immediately deleted. • **Clips:** A confirmation is required for a clip deletion, but not for a playlist deletion. • **Playlists:** A confirmation is required for a playlist deletion, but not for a clip deletion. • **Clips & Playlists:** A confirmation is required both for a playlist deletion, and for a clip deletion.
Default Values	Off

Note

This parameter does not apply to the **Clear Video Disks** command, available in the Multicam Setup window of the server-based application, which already has its own confirmation message.

3.9.7. Push Settings

Introduction

The Push settings relate to the management of the Push function on the EVS server. The Push function allows users to easily send a copy of a clip to another machine on the network via the GigE network.

These fields are available in the following interfaces:

• in the Multicam Configuration window, Operation tab, in the basic display mode:

  ○ on page 3 on the server-based application.

  ○ on page 1 on the web-based interface.

• in the Operational setup menu of the Remote Control Panel (7.1).

The following screenshot presents page 3 of the Operation tab in the server-based application, where the Push settings are available, and highlights the Push settings area:

Push Target

Description	Specifies which EVS servers will be listed as possible targets for push actions when the user selects: • the default Target 1 and Target 2 in the settings, or • a target for a specific push action if no default target has been configured.
Values	The value is forced to: • **Gigabit:** Only EVS servers reachable via the GigE network. The servers are listed by their GigE server name, and IP Address.
Default Value	Gigabit

Push Target 1 / 2

Description	Specifies to which machine(s) on the network the clips must automatically be sent when the operator uses the **PUSH** function on the LSM Remote Panel. The machines defined in this setting are also used as default target for clip copies. The users can define two default targets: Target 1/ Target 2. The clips will be pushed in sequential order.
Values	A list of values will be displayed depending on the value assigned to the **Target** setting: • **--------**: When no target is defined in these parameters, the user will be able to define the requested target when (s)he calls the **PUSH** function. • **\<GigE server name and IP Address\>** are listed and can be assigned for targets belonging on the GigE network.
Default Values	-------- (No target machine specified)

Push Mode

Description	Specifies how the clips should be sent using the **PUSH** function, that is to say with or without the original guardbands.
Values	The following values are possible: • **Short:** The clips are sent from the Short IN to the Short OUT points, to which the guardbands of the destination machine are added. • **Long:** The clips are sent from the Protect IN to the Protect OUT.
Default Values	Short

Push Receive Page

| Description	Specifies the page of your machine where clips sent to you by other network operators using the **PUSH** function must be stored. See section "Navigating and Editing in the Multicam Configuration Window" on page 47 for more information on how to enable pages
Values	Page 1 to 10 (=0). Several pages can be selected.
Default Values	(Page) 5

3.9.8.   Audio Settings

Introduction

These fields are available in the following interfaces:

- in the Multicam Configuration window, Operation tab, in the basic display mode:
  - on page 3 on the server-based application.
  - on page 1 on the web-based interface.
- in the Operational setup menu of the Remote Control Panel (8.1).

The following screenshot presents page 3 of the Operation tab in the server-based application, where the Audio settings are available, and highlights the Audio settings area:
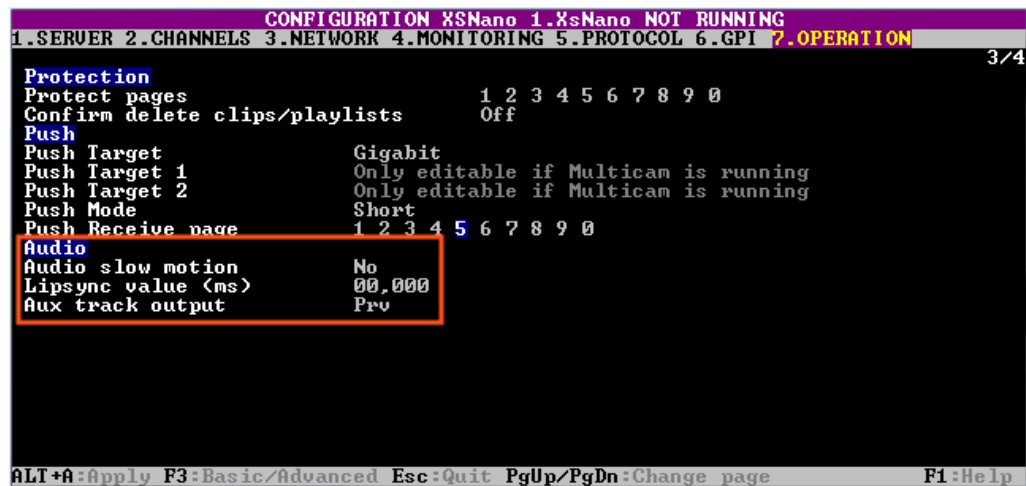
Audio slow motion

Description	Allows users to play back or mute the audio track when the playing speed is different than 100%.
Values	The following values are possible: • **Yes:** The audio track is not muted during the playback. • **No:** The audio track is muted during the playback.
Default value	No

Lipsync value (ms)

Description	Specifies the delay (in ms) between video and audio signals: • A positive value means video is ahead of audio. • A negative value means audio ahead of video.
Values	The following values are possible: • Range for PAL: from -41,458 ms to 14,708 ms → 848 to 3544 samples, 0 ms → 2838 samples • Range for NTSC: from -34,625 to 12,125 ms → 688 to 2932 (samples), 0 ms → 2350 samples
Default value	0 ms

Note

This adjustment is done during the record process. A new Lipsync value will apply for the next recorded pictures only.

Aux track output

Description	Specifies to which audio outputs the auxiliary track of the playlist will be played out.
Values	The following values are possible: • **PRV:** The auxiliary track will use the audio outputs normally assigned to the PRV channel. If no PRV channel is available, the Aux Track will not be assigned to any audio output. • **PRV&7-8/15-16:** The auxiliary track will use the audio outputs normally assigned to the PRV channel if there is one, plus all the audio outputs from 7-8/15-16 that have not yet been assigned to another channel. Use this option if you need an auxiliary track without PRV channel available. • **PGM:** The auxiliary track will use the audio outputs normally assigned to the PGM channel.
Default value	PRV

3.9.9.   EVS Controller Settings

Introduction

The EVS Controller settings gather:

- ◦ Settings related to the behavior of the keys, lever or jog of the Remote Panel.

> ⚠️ **Warning**
> Most of the settings are only available or applicable with base configurations associated to the use of an EVS Remote Panel (XSense Remote).

These fields are available in the following interfaces:

- • in the Multicam Configuration window, Operation tab, in the basic display mode:

  - ◦ on page 4 on the server-based application.

  - ◦ on page 1 on the web-based interface.

- • in the Operational setup menu of the Remote Control Panel (9.X).

The following screenshot presents page 4 of the Operation tab in the server-based application, where the EVS Controller settings are available:
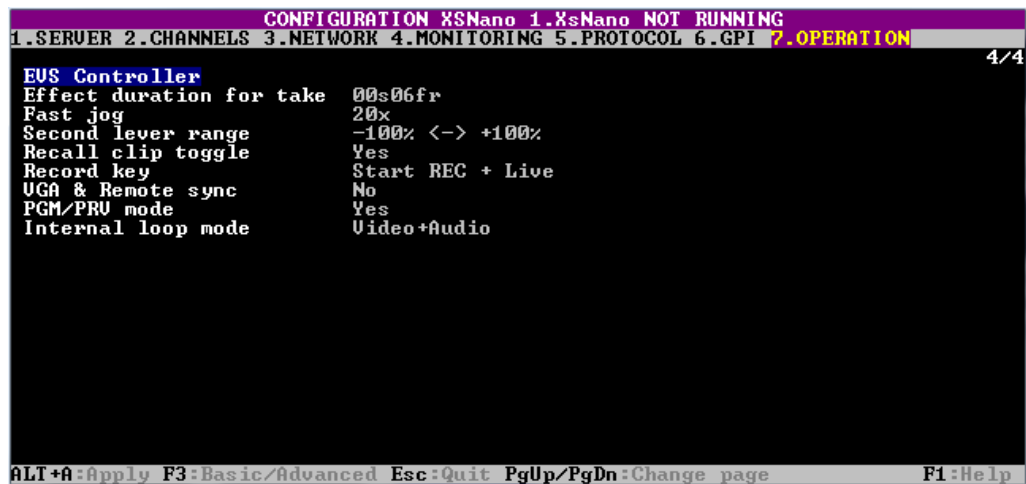
Effect duration for take

Description	Defines the duration of the transition when using the **TAKE** key to chain 2 sequences in PGM+PRV mode.
Values	Range of values: 00s00fr to 20s00fr.
Default value	00s05fr

Fast jog

Description	Sets the increment of the jump when the Remote Panel is used in Fast Jog mode.
Values	The values from 1 to 20 times are possible.
Default value	20x

Second lever range

Context	The lever can be used in normal mode to play back clips at slow motion speed from 0 to 100%. A secondary range is available to playback material at other speed ranges.
	To gain access to the secondary speed from the remote controller, press **SHIFT** + **LEVER/TAKE**.
	The second lever range is also available when editing the speed of playlist clips.
Description	Specifies the secondary speed range on the Remote Panel.
Values	The following values are possible:
	• -100% → +100%
	• 0 → +200%
	• -200% → +200%
	• 0 → +400%
	• -400% → +400%
Default value	-100% → +100%

Recall clip toggle

Description	Enables/disables the selection of the camera of a clip through the Function keys: Pressing several times the F_ key browses to CAM A, CAM B, CAM C, CAM D, CAM E and CAM F.
Values	Yes / No
Default value	Yes

Record key

Description	Changes the function of the **RECORD** key on the Remote Panel, as described below.

Values	The following values are possible:
	• **Start REC+Live:**
	  Pressing the **RECORD** key starts the record process and switches to LIVE mode.
	• **Live:**
	  Pressing the **RECORD** key only switches to last recorded picture, but the record is not restarted if it has been previously stopped by the operator.

Default value	Start REC+Live

VGA & Remote sync

Description	Specifies whether and how the current clips machine, page and bank of VGA screens and Remote Panel must be synchronized.

Values	The following values are possible:
	• **No:**
	  Clip machine, page and bank can be selected independently on the VGA screen and on the Remote Panel.
	• **Yes:**
	  Clip machine, page and bank are synchronized between VGA screen and Remote Panel. Connecting to the clips of a network machine or coming back to the clips of the local machine, or selecting a new page or bank on one side will be automatically reflected on the other.
	• **Server:**
	  Clip pages and banks can be selected independently on VGA and Remote Panel, but connecting to the clips of a network machine or coming back to the clips of the local machine on the VGA or Remote Panel will be automatically reflected on the other.

Default value	No

PGM/PRV mode

Description	Allows the user to select the PGM/PRV mode on the LCD display as a function accessible from the **A** button on the Remote Panel's main menu. Otherwise, the PGM/PRV mode selection is not accessible from the A button.
Values	The following values are possible: • **Yes:** The PGM/PRV mode is available from the **A** key on the Remote Panel. • **No:** The PGM/PRV mode is not available from the **A** key on the Remote Panel.
Default value	Yes

Internal loop mode

Description	Defines which components of PGM1 output must be recorded back into the server when the Loop mode is engaged.
Values	The following values are possible: • **Video + Audio:** Both video and audio signals of PGM1 are recorded back into CAM A input.. • **Video only:** Only the video signal of PGM1 is recorded back into CAM A input. This allows the operator to continue the record of live audio tracks during the Loop process. This can be useful to add music, voice or live sound to an edit for example.
Default value	Video + Audio

> **Note**
> In audio embedded, the audio is always looped, whether the loop mode is set to Video + Audio or Video only.

Glossary

G

GPI

Abbreviation for General Purpose Interface. This refers to a device used as an communication interface with the EVS server. It has digital lines which may be used for input, output, or both, depending on the function.

L

Logical channel

Logical player or recorder channel in a given configuration, independent from the physical connections that have to be used to enable this logical channel.

M

Multicam Configuration window

Window in the server-based and web-based Multicam Setup application from where you can define all configuration parameters.

Multicam Setup application

Term used to refer equally to the server-based or web-based user interface used to set up and configure the EVS servers

Multicam Setup window

Initial Window in the server-based and web-based Multicam Setup application, that is displayed when the EVS server is not running a given configuration yet. It gives access to the configuration lines defined on the EVS server and to the commonly used maintenance tools.

O

Operational Setup menu

Menu accessible on the Remote Panel using the SHIFT+D keys form the main menu. It allows users to define operational parameters.

OSD

Abbreviation for on-screen display.

P

Physical channel

Physical connection to a connector on a codec module of a V3X board that used and assigned as a player or record channel in a given configuration.

S

Server-Based Multicam Setup application

Server-Based application used to set up and configure the EVS servers. The short form is 'Server-Based application' in this user manual. This is accessible from the EVS Server itself when it has been started.

T

Technical Setup menu

Menu accessible on the Remote Panel using the F0 key. It allows users to define currently used configuration parameters.

W

Web-Based Multicam Setup interface

Web-Based interface used to set up and configure the EVS servers. The short form is 'web-based interface' in this manual. This is accessible from any machine (PC or server) that is on the same network range as the EVS server. This can be accessed from a web browser using the following URL pattern: http://xxx.xxx.xxx.xxx/cfgweb/ where the crosses correspond to the IP address of the PC LAN of the EVS server.

Instant Tapeless Technology

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