DIGITAL CINEMA

DTS® XD10 Cinema Media Player

Installation and Operations Guide

Version 2.1

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2.0/ August 2006	Modified for changes in XD10 Version 2.00.38, including High Definition Video, network functions, and various updates.
1.2/ May 2004	
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A. Connector Pinouts

B. Cinema Processor Interface Wiring Diagrams

C. HD Video and DTS-CSS Option Wiring Diagrams

D. Cable Assemblies and Breakout Cards

E. DTS Timecode Reader Head Mounting Brackets

F. System Parts List

G. Specifications

H. Menu Structure

I. Technical Maintenance

J. Installing the DTS-CSS Option

K. Tech Notices

Introduction

This manual explains the DTS® XD10 Cinema Media Player setup and operation. It contains full instructions for installing hardware and software, setting up audio playback, configuring the system, performing maintenance and troubleshooting, and setting up and operating optional functions: high definition video, DTS-CSS (subtitling, narration and captions), and digital audio out.

How to Use this Guide

The guide is divided into three parts. The first part covers operations for the projectionist. The second part covers the installation, setup and other theater technician functions. The appendixes provide detailed information for the theater technician.

Part 1: Projectionist

1. Operating the XD10 Cinema Media Player
2. Loading and Playing Content
3. XD10 Playback Menus
4. Maintenance and Troubleshooting

Part 2: Technician

5. Hardware Installation
6. Installing Licenses and Upgrading Software
7. System Setup Menus

Appendices: Technician

A. Connector Pinouts
B. Cinema Processor Interface Wiring Diagrams
C. DTS-CSS and HD Video Option Wiring Diagrams
D. Cable Assemblies and Breakout Cards
E. DTS Timecode Reader Head Mounting Brackets
F. System Parts List
G. Specifications
H. Menu Structure
I. Technical Maintenance
J. Installing the DTS-CSS Option
K. Tech Notes

About the XD10 Cinema Player

The XD10 Cinema Media Player is the latest audio/video playback system created by DTS. The XD10 has been engineered to deliver 10 channels of digital surround sound. It is a full-featured media solution with pre-show programming and networking capabilities.

Optional functions are DTS HD Video, the CSS System (subtitling, captions, and audio description), and Digital Audio Out.

The XD10 contains two DVD drives and a large-capacity internal hard drive, which can store approximately 30 full-length feature soundtracks.

To get the most out of the XD10 system, we suggest that you review this manual and keep it available during system installation and initial operation.

We publish the *Tech Talk* newsletter with tips and updates for Service Technicians. *Tech Talk* is published quarterly, and mailed. If you would like to be added to our mailing list, contact DTS Technical Service. It is also posted on the free DTS Online TechCenter located on our website at www.dts.com/digitalcinema

DTS Technical Service

For assistance, please contact the closest DTS office. After business hours, assistance is available by calling the DTS headquarters telephone number, which connects you to the after-hours answering service. Please leave a message with the answering service and DTS technical support will return the call as soon as possible.

- ☑ Replacement discs for soundtracks can be requested from the film distributor. Replacement discs for trailers and special options can be requested from DTS.

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Installation Checklist

Use these checklists to make sure that important settings are completed before playing content to an audience. There are separate checklists for installing the XD10, CSS Option and Video Option.

Table 1. XD10 Installation and Setup

Completed	Task	
☐	Install XD10 in Equipment Rack	Section 5.2.1, XD10 Player Installation
☐	Install DTS Timecode Reader Head onto Projector(s)	Section 5.2.3, DTS Timecode Reader Head Installation
	CONNECT CABLING:	
☐	Power Cable	Appendix D, Cable Assemblies and Breakout Cards.
☐	DTS Timecode Reader Head Interconnect Cable to XD10 Timecode Connector	Appendix D, Cable Assemblies and Breakout Cards.
☐	Cable from XD10 Automation to Cinema Processor	Appendix B, Interface to Cinema Processors.
☐	Audio (analog output) Cable from XD10 Analog Out to Cinema Processor	Appendix B, Interface to Cinema Processors.
	PROGRAMMING STEPS	
☐	Automation Setup: Pin Definitions, Fallback Formats, and Operating Modes	Section 7.5, Automation Controls
☐	I/O Control: Pin Definitions and Language Setups	Section 7.6, I/O Control
☐	Automation Test	Section 7.6.5, Automation Test
☐	Language Versions: Enable?	Section 7.2.3, Language Versions
☐	Use Automated Language Setups?	Section 7.6.3, Language Setups
☐	If Used, Enable/Disable Network Communication	Section 7.8.1, Network Mode
☐	Set System Clock: Set Time Zone, Date and Time.	Section 7.9, System Clock
☐	Set Password to Prevent Unauthorized Access, if Appropriate.	Section 7.7.1.10, Set Password.
☐		
	ADJUST AND TEST	
☐	Set and Adjust XD10 Sound Levels	Section 7.2.1, Level Adjustment
☐	Set Timecode Reader Sync Adjustment	Section 5.5, Timecode Reader Sync Adjustment
☐	Verify Sound Performance	Section 5.6.1, Verify Sound Performance
☐	Perform Audio Tests	Section 7.2.2, Audio Tests
☐	Load Cinema Feature / Trailer Disc(s)	Section 2.3, Loading Content
☐	Check Automation Fail-Safe (Default) Operation	Section 5.7, Check Automatic Fail-Safe (Default) Operation

If the Cinema Subtitling System (CSS) option is to be installed, complete the steps in Table 2.

Table 2. CSS Installation and Setup

Completed	Task	
☐	☐ Install License for CSS Option (CD-ROM)	Section 6.3, Installation of License Discs
☐	Install Cable from EMA Control Connector to EMA	Appendix J. Installing the CSS Option.
☐	Install Cable from Subtitle Projector to XD10	Appendix J, Installing the CSS Option.
☐	Set Up the Subtitle Projector	Section 7.4, CSS Setup
☐	Position the EMA Mask Trims	Appendix J, Installing the CSS Option.
☐	Set Cinema Subtitling Projector (subtitle) Language	Section 3.1.4.3, CSS Language
☐	Check Cinema Subtitling Projector (subtitle) Lamp Status	Section 3.1.4.4, CSS Lamp Hours

If the Video option is to be installed, complete the steps in Table 3.

Table 3. Video Option Installation and Setup

Completed	Task	
☐	Video Cabling	Appendix C, HD Video Interface Wiring Diagram.
☐	Install the license for Video Option (CD-ROM)	Section 6.3, Installation of License Discs
☐	Configure the Video Output	Section 7.3, Video Output Settings
☐	Load Video Disc(s)	Section 2.3.4, Loading DTS XD10 Video Content Discs
☐	Set Video Output	Section 7.3.1, Video Output Settings
☐	Set Playlist Automation	Sections 7.5, Format / Automation and 7.6.4, Playlist
☐	Play Test Images (Reset to Normal when Complete)	Section 7.3.1.7, Video Test Contents

Caution Notices

Lithium Battery for the XD10 Motherboard: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Power Cord to the XD10 back panel: The power cord is the main disconnect device. It should be plugged into an easily accessible outlet. The power cord is to be used in a minimum type SVT 18/3 rated 250 Volts ac, 10 Amps with a maximum length of 4.5 M, with one end terminated in an IEC 320 attachment plug and the other end terminated in a NEMA 5-15P Plug.

Part 1: Operator

The first four chapters of this manual describe the information the projectionist needs to operate the XD10 Cinema Player on a day-to-day basis.

- Operating the XD10 Cinema Media Player
- Loading and Playing Content
- XD10 Playback Menus
- Maintenance and Troubleshooting

1. Operating the XD10 Cinema Media Player

1.1. XD10 Components

1.1.1. Front Panel Controls and Indicators

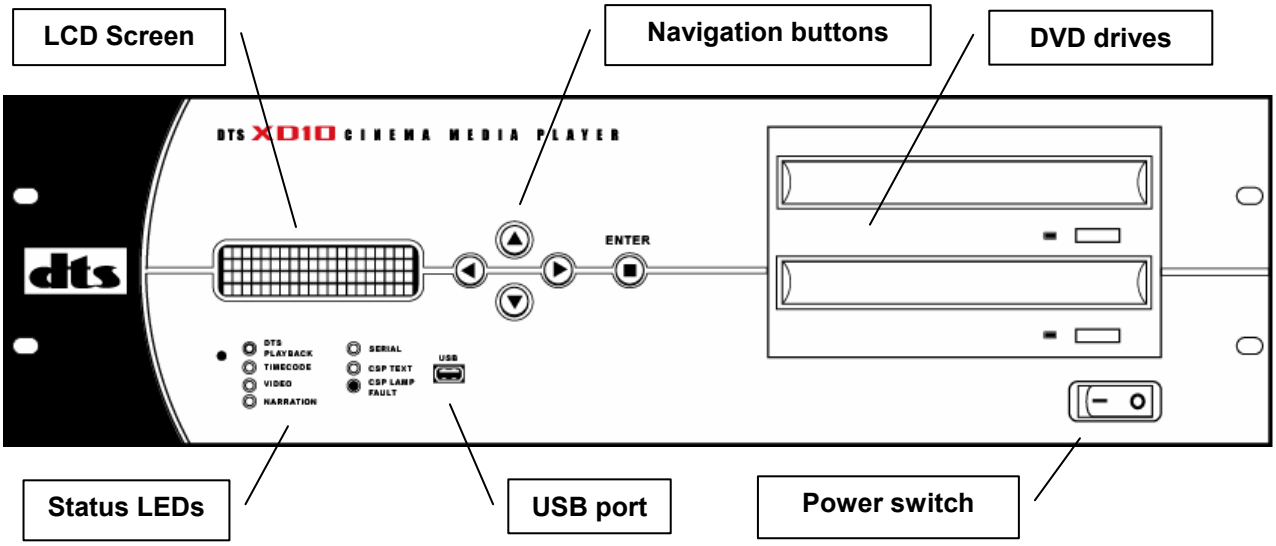


Figure 1. Front Panel Controls and Indicators

The front panel contains the following controls and indicators for operating the XD10 system.

- **LCD Screen**: Four lines of text provide status messages and menus. Special characters for foreign languages are not displayed.
- **DVD Drives**: Two DVD drives are used to load soundtracks, trailers and video content onto the hard drive.
- **Navigation Buttons**: Four arrows and **Enter** are used to navigate menus and select options.
- **Status LEDs**: Seven LEDs provide status information during playback.
- **Power Switch**: Switch turns the unit on and off. (The main power switch is located on the back of the XD10.)
- **USB Port:** A USB memory device can be used to save and restore XD10 configuration settings.

1.1.2. Powering on the XD10

Start by verifying that the rear panel power switch is in the ON position. Then, turn on the front panel power switch. It typically takes the system 45 seconds to initialize. It may take an additional minute if the system is performing one of its period self diagnostics.

While the system is initializing, the following messages will appear on the LCD screen on the front panel of the XD10.

```
Loader V1.04 (444A)

  Initializing ...
```

```
DTS-XD10

   Loading Software
    Please wait...
```

Wait until the screen displays the following message before using it.

```
Ready
```

If no messages appear on the LCD screen after you have turned on both front and back power switches, check the following:

- Is the power to the sound rack on?
- Is the power cable connected?
- Is the sound rack power breaker on?
- Are both the front and rear panel power switches on?
- Are all internal cables connected and boards well seated?

1.1.3. LED Indicators

The table below describes the LED functions on the XD10 front panel.

Table 4. Front Panel LED Indicators

LED	Color	Indication
DTS PLAYBACK	Blue	Light is continuous if XD10 is playing DTS audio. Light blinks if XD10 is playing DTS audio, but DTS format is not selected.
TIMECODE	Green	Reading valid timecode from the reader head.
VIDEO	Green	Playing video playlist or test material.
NARRATION	Green	Playing narration track to timecode.
SERIAL	Green	Serial text for data wall
CSP TEXT	Green	Playing CSS subtitles or captions.
CSP LAMP FAULT	Red	If flashing, CSS projector lamp needs to be replaced. If continuous, lamp has failed.

1.1.4. LCD Screen

1.1.4.1. LCD Modes

The liquid crystal display (LCD) screen on the front panel of the XD10 operates in two modes:

- **Status mode**. During playback, the screen displays information about the content currently being played.
- **Menu mode**. In menu mode, the screen displays menus that can be used to view and adjust playback settings.

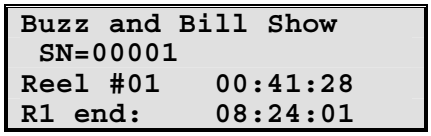
The XD10 front panel keypad may be used to switch the display between the status mode and menu mode.

1.1.4.2. Status Display

The XD10 status display reads “Ready” when the XD10 is ready to play but not actively receiving timecode or playing in DTS or video content.

When the XD10 receives timecode, the status display shows the following 4 lines, as shown in the screen below.

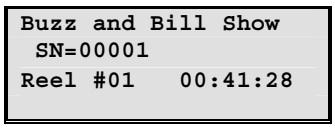
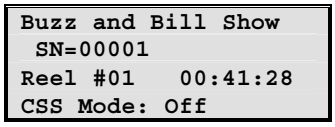
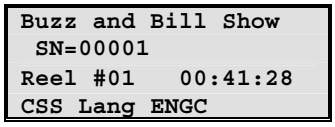
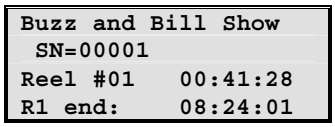
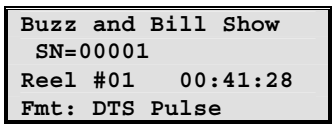
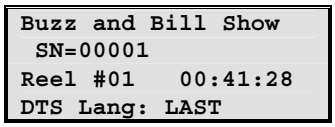
- Line 1: Title of film or trailer
- Line 2: Serial number in the timecode that identifies the film.
- Line 3: Timecode reel number and elapsed timecode
- Line 4: Configurable information line



1.1.4.3. Configurable Information Line

Table 5 lists the options for Line 4. In the screen above, Line 4 displays *End of Reel time.*

Table 5. Configurable Information Options

Option	Example	Indication
1		**Blank**. Bottom line is blank. It does not display any information.
2		**CSS Mode.** This displays the current On/Off status of the CSS function (See the section on *CSS Playback* in Chapter 2, Playing Content, in this guide).
3		**CSS Lang**. This displays the current language selection for the CSS subtitles. (See the section on *CSS Playback* in Chapter 2, *Playing Content*, in this guide.)
4		**End of Reel Time**. This choice displays the timecode at which the audio for the current soundtrack reel terminates. In normal operation, the reel change occurs a few seconds before this time is reached.
5		**Fmt.** This choice displays the current format selected by the XD10 to communicate with the external automation system or Cinema Processor. In some configurations the XD10 may not recognize external format changes. In those cases, this line will display the last format selected by the XD10.
6		**DTS Lang.** This choice displays the language code for the soundtrack currently playing. (See information on selecting a playback language in another part of this manual.)

1.1.4.4. Navigating through the Menus

Use the five buttons on the XD10 front panel to navigate through the XD10 menus.

When the status display reads "Ready", as shown below, press the **Enter** button, shown on the front panel in Figure 1, to access the menus.

```
Ready
```

After you press **Enter,** the **Main Menu,** shown below, will appear on the LCD screen.

```
MAIN MENU
► Playback
• Setup
• Info
• Exit Menus
```

The '►' character on the left of the display is the cursor. The text to the right of the cursor describes the current command. Use the **Up** and **Down** buttons to scroll up and down the menu of commands. Note that the LCD only displays four lines of text at a time, but pressing the up and down buttons will cause the text to scroll up and down to reveal the other lines.

To execute a command, position the cursor next to it and press the **Enter** button. Most menus contain an **Exit Menus** command which returns the LCD to the status display.

Table 6. Front Panel Keys

Front Panel Key	Description
► (Right arrow)	Moves forward to the next menu. Used to move the cursor to the next field in some menus.
◄ (Left arrow)	Goes back to the previous menu. When the menu at the top level of the menu structure is reached, returns to the status display. Used to move the cursor to the next field in some menus. Sometimes used as an Abort key
▲ (Up arrow)	Moves the cursor up one line. Used to increment a value in some menus.
▼ (Down arrow)	Moves the cursor down one line. Used to decrement a value in some menus.
Enter	Selects and executes the command at the cursor.

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2. Loading and Playing Content

2.1. Types of Content

The XD10 plays three types of content:

- Soundtracks (Features and trailers)
- Video (Standard and High Definition)
- CSS (Cinema Subtitling System: Subtitling, Captions and Narration)

2.1.1. Soundtrack Content

Soundtracks are DTS audio files for features and trailers. They are delivered on discs, which are inserted in the CD/DVD drives on the front panel of the XD10 and saved on the XD10's hard drive.

2.1.2. Video Content

DTS video content can be delivered in two ways: discs that can be downloaded to the XD10 or content delivered via a network. The video content includes a configuration file that determines the video playlists, schedules and automatic start times.

The creation of content discs is not covered in this manual.

☑ The XD10 will not play standard consumer DVD movies or music CDs. XD10 content DVDs for cinema must be created using proprietary DTS software.

2.1.3. CSS Content

The DTS-CSS system was designed to aid hearing impaired and visually impaired audiences. In addition, it is also capable of language translations.

In order to use the CSS system, your XD10 must have a license for the CSS Option. Three types of program content may be provided to a theater equipped with an XD10 that has the CSS option installed.

- Projected Subtitles or Captions
- Captions for rear data wall
- Narration

The CSS content is not delivered with the feature soundtrack disc(s). They are delivered separately. CSS discs will be labeled "DTS Access™" and with the same show title and serial number as the feature soundtrack disc. The disc label also shows what type of CSS content is included, as not all types of CSS content are included with all CSS discs.

☑ Not all features provide a DTS Access™ disc. Check with your distributor or contact DTS for features that are available.

The CSS playback works the same as DTS feature audio playback, in the sense that the film contains timecode that must match the assigned film and audio serial numbers. This prevents playback of the wrong content with the wrong feature.

The projectionist threads the film through the DTS Timecode Reader Head on the projector, and when the show starts, the CSS will play automatically, synchronizing the content to the film. Some operational tasks can be performed by the projectionist. These are explained in more detail in Chapter 3, *Playback Menus*.

2.1.3.1. CSS Terminology

These are some of the terms associated with the CSS Option.

CSS: Cinema Subtitling System. A system designed by DTS that provides DTS Access™ content.

DTS Access™: Group of delivery playback files that include subtitles, narration, and Rear Window™. (Rear Window is a trademark of WGBH public broadcasting system in Boston.)

Subtitle: Projected text of on-screen dialog. Often this has been translated into a language different than the original version.

Caption ("front captions"): Projected text on screen that contains both film dialog and sound descriptions. This is also referred to as **Open Caption**.

Rear Window™ ("rear captions"): This system consists of a LED reader board (display) mounted in the auditorium of the theater. It receives serial data from the CSS and displays caption text that is projected onto individual reflectors rather than the screen.

Narration: This is a description of on screen action during feature playback. It is normally received via an IR (Infrared) or FM (Frequency Modulation) device to a head set worn by an audience member.

CSP: Cinema Subtitle Projector is a custom designed video projector for use with the CSS Option only.

EMA (External Masking Apparatus): A bracket that holds the CSP (cinema subtitling projector). Also contains a special douser and masking system

2.2. Content Delivery

Most content is delivered on discs. Customers who have XD10s with the HD Video Option may make arrangements with DTS to receive content via a network.

2.2.1. Types of DTS Discs

DTS theaters receive most content on CD-ROM discs. There are several types of discs.

1. DTS Soundtrack discs for feature films.
   Soundtrack discs are issued by the film studios' distribution companies and must be returned with the prints. Feature film soundtrack discs sometimes include trailers.
2. DTS Trailer discs. These discs only contain trailer soundtracks. Trailer discs are distributed by DTS and do not have to be returned.
3. XD10 Video discs. These discs contain XD10 video content, playlist and schedule information. These discs do not have to be returned.
4. DTS Access™ discs are issued by the film studios' distribution companies and must be returned with the prints. Access discs may include any or all of the following and will only play when the XD10 has the CSS option:
   - CSS subtitles or front captions (projected on the screen)
   - "Rear" Captions (captions displayed at the rear of the theater and onto a "Rear Window™" display)
   - Audio Description that describes action on screen.

☑ The XD10 will only accept a disc made specifically for DTS cinema playback equipment. The XD10 will reject consumer CD audio or DVD type discs.

2.2.2. DTS Cinema Media Network™

Customers with the High Definition Video Option may make arrangements with DTS to receive content via the DTS Cinema Media Network™. If the XD10 is connected to the DTS Cinema Media Network™, then no operator intervention is required to receive video content and configuration. All

procedures are done remotely from the DTS Cinema Media Network™ when the XD10 is not being used for playback.

The network setup parameters for the XD10 must be configured, as required by the network system. The specifics regarding the network system are not covered in this manual.

2.3. Loading Content

Generally, any DTS feature soundtrack disc (film or trailer), DTS Access™ disc (with CSS content), or XD10 video content disc will automatically load when inserted in the XD10 drive. The content will be copied onto the XD10 hard disc for playback at a later time. The XD10 will store several soundtracks and/or DTS Access™ discs for multiple features and trailers.

The XD10 will only accept a disc made specifically for cinema playback. The XD10 will reject consumer CD audio or DVD type discs.

Please note that DTS soundtrack feature discs do not contain CSS files for the feature. CSS content for a feature is on a DTS Access™ disc, and must be loaded separately. It does not matter whether the DTS Access™ or soundtrack disc is loaded first. The CSS content for a feature can be loaded and played without the DTS soundtrack for the same feature.

2.3.1. DTS Soundtrack Discs

Soundtrack discs can be single discs or come as sets of double or triple discs.

1. 1-disc soundtrack. DTS soundtrack for films running about 90 minutes or less may be delivered with one disc. These discs are labeled as "one disc only".
2. 2-disc soundtrack. Films running 90 minutes but less than three hours will likely require two discs which are labeled “Disc A” and “Disc B”. These movie soundtracks discs must be loaded as
   a set.
3. 3-disc soundtrack. In rare cases, a soundtrack may require three discs (“Disc A”, “Disc B” and “Disc C”) if it runs more than 3 hours. Loading a three disc soundtrack must be done in two separate load processes.
4. DTS trailer soundtrack discs. Trailer discs are always single discs.

2.3.2. Loading Soundtrack Discs

1. Start while the XD10 is not playing content. The status display should read "Ready."
2. Open the DVD drive by pressing the "open/close" button, generally located just under the tray and to the right. Place the disc in the tray with the printed side up. For a two-disc or three-disc soundtrack, place Disc A into the top drive and Disc B in the bottom drive.
3. Close the tray by pressing the "open/close" button, and the XD10 will check the contents of the disc before loading. If it detects an error, it will display one of the following messages.

```
Warning: Second Disc
May be Missing
Insert Second Disc
[Enter] - Ignore
```

This warning message indicates that one disc of a two-disc set was not inserted. To add the second disc, press the left key to eject the disc and start over with both discs. This warning may also occur for a three-disc set and can be ignored. Press Enter to ignore the warning and proceed to load the contents.

```
ERROR: Installed
Discs Are Not a Set
[Left] Abort Load
[Enter] - Continue
```

This error message indicates that the two-disc set inserted in the drives is not a matching set. This could be caused by any of the following:

- The discs are from different movies.
- The discs are for the same movie but one is in a different language.
- The discs are duplicates
- One of the discs is not a cinema movie disc.

4. Press the ◄ key to eject the disc and start over with the matching discs. Pressing **Enter** will ignore the error, but the soundtrack loaded might be incomplete.
5. When the load process begins the XD10 displays information about the content currently being copied. For example:

```
Loading drive A

S65492 R4  Eng Snd
```

6. Typical load time is three minutes per disc. The following message appears when the load is complete.

```


Load Completed.
[Enter] - Continue
```

7. Press **Enter** and the disc trays will open. Remove the disc(s) from the tray(s). Press the "open/close" button to close the tray(s).
8. Repeat steps 1 through 6 for "Disc C" of a three-disc soundtrack.

9. Place the DTS soundtrack discs back in the film canisters for return to the depot.

2.3.2.1. Compatibility with Legacy Soundtrack Discs

Old DTS soundtrack discs did not contain a language ID. If you load an older disc that does NOT contain a Language ID, and if Language Versions is **enabled**, the XD10 will prompt you to identify the playback language desired. If you are prompted, you must identify the playback language of the disc. If Language Versions is **disabled**, the XD10 will NOT prompt you to identify the language.

If you load a disc and are prompted for the language, you must select the language from the Languages menu. The only selection you make should match the language listed on the disc label.

```
Languages
• ( ) Arabic
• (*) Basque
• ( ) Braz. Portuguese
      …
```

Available Soundtrack Language List (subject to change)

English	Basque	Bulgarian	Catalan	Croatian	Czech
Danish	Dutch	Finnish	Flemish	French	German
Greek	Hebrew	Hungarian	Icelandic	Italian	Norwegian
Polish	Portuguese	Russian	Serbian	Slovak	Slovenian
Swedish	Turkish	Hindi	Indonesian	Japanese	Kannada
Khmer	Malay	Malayalam	Tamil	Teluga	Thai
Urdu	Vietnamese	Arabic	Farsi	Masai	Zulu
Fr. Canadian	Mexican Spanish	Braz. Portuguese	Latin Spanish	Estonian	German (Austria)
Latvian	Lithuanian	Spanish (Castil)	Swiss German	Cantonese	Korean
Mandarin	Aramaic				

After selecting a language, a confirmation screen will display.

```
Confirm Selection
<Selected Language>
• Yes / Accept
• No / Reselect
• Abort
```

- **Yes** – Confirm the language is correct and load disc.
- **No** – Go back to the language menu and make a new selection.
- **Abort** – Stop the load process and eject the disc.

2.3.3. Handling a CD-ROM Read Error

The following message may appear on the screen if an error occurs while the XD10 is loading the soundtrack disc:

```
Warning: CD ROM Error
Some Audio Missing
[Left] - Abort Load
[Enter] Continue
```

The options are:

- Press **Enter** to continue loading the incomplete material, or
- Press ◄ to **Abort** without loading any of the soundtrack.

If you press **Enter,** then a portion of the audio data will be missing. When the soundtrack is played, it will revert to the fallback format when it reaches the missing data. It will return to the DTS format when it sees valid data. If you load the disc again, it will only attempt to copy the missing data.

Pressing ◄ aborts the loading process. The drives will open and eject the discs. The data that was already copied from the hard drive will be deleted. Replacement discs for soundtracks can be requested from the film distributor. Replacement discs for trailers and special options can be requested from DTS.

2.3.4. Loading DTS XD10 Video Content Discs

XD10 video content discs will only load on an XD10 equipped with the HD Video Option. The procedure for loading DTS Video Content discs is:

1. Start while the XD10 is not playing content. The screen will display the following message.

```
Ready
```

2. Open the DVD drive. Place the disc in the tray with the printed side up.
3. Close the tray. The XD10 will check the contents of the disc before loading to ensure that it does not reload load video content already on the XD10.
4. When the load process begins, the XD10 will display information about the content currently being copied. For example:

```
Loading Video
Configuration Disc

Please Wait...
```

5. The following message will appear when the load is complete.

```
Loading Video
Configuration Disc
Completed.
[Enter]-Continue
```

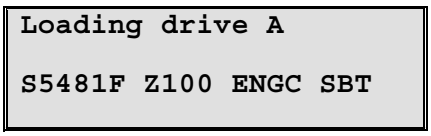
6. Press Enter and the disc trays will open. Remove the disc from the tray.

2.3.5. Loading a DTS Access™ Disc

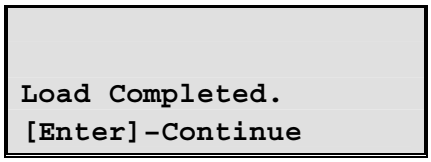
DTS Access™ discs are always single discs labeled with the name of the feature film and the language of the content on the disc. To load a DTS Access™ disc, follow these steps:

1. Start when "Ready" is displayed on the LCD screen on the XD 10's front panel.

2. Open the drive, place the disc in the tray with the printed side up, and close the tray. The XD10 will display information about the content being copied. For example:



3. The following message will appear when the load is complete.



4. Press **Enter** and the disc trays will open. Remove the disc from the tray and close the tray.

☑ DTS Access™ discs will load onto an XD10 even if the unit is not licensed for the discs. But they will only play back on XD10s that have a CSS license.

2.4. Managing Disk Space

The XD10 hard disk reserves 25 gigabytes of space for film soundtrack and CSS content. The XD10 uses about one G-byte of space for an average two-hour feature with soundtrack including DTS Access™ content, such as subtitles. Alternatively, one G-byte can also hold content for approximately 50 three-minute trailers.

The XD10 automatically ensures there is enough storage space on the hard drive before loading new feature and trailer soundtracks. When necessary, it deletes old material to make room for new content. Old material consists of the features and trailers that have not been played for the longest duration of time. All content associated with the selected feature or trailer, such as different language versions, is deleted at the same time.

Content for features or trailers can be deleted manually as well. See Chapter 3, Section 3.2.2.5.1.1, *Delete Contents*, for more information.

XD10 units with the Video Option are equipped with a larger hard disk and have 70 gigabytes or more reserved for video content. The hard disk space for the video content is separate from the space for the film content. Adding video content does not reduce the space for film content, and vise versa.

2.5. Playing Content with Film

Playback of content that is synchronized to the film is controlled by the signal from the DTS Timecode Reader Head as the film passes through. The XD10 searches its internal hard drive for any soundtrack and/or CSS content that matches the feature reel or trailer that is currently playing. The LED indicators on the XD10 front panel show which content type is playing.

2.5.1. Playback Status Indicators

When film with DTS timecode passes through the DTS Reader head, the green light on the reader will illuminate and the Timecode LED on the XD10 front panel will illuminate. At this point, the corresponding DTS content will automatically play.

If DTS soundtrack is playing, the blue DTS Playback LED will illuminate. If CSS content is playing, then the corresponding LED will illuminate (Audio Narration, Serial or CSP text).

2.5.2. Changeovers

When you use two projectors, the XD10 will automatically make a sound changeover when the first frame of the picture *with timecode* arrives at the aperture plate on the upcoming projector.

DTS Digital Sound® changes independently from the projector's douser position. You may need to adjust the roll down on the upcoming projector to make the changeover "seamless."

For more information, see Chapter 4, Section 4.5, *Guide for a Seamless Changeover*.

2.5.3. Handling Film Breaks and Edits

The XD10 will automatically track any length of edit. A 30-millisecond cross fade will make the edit transparent. In the unfortunate event of a film break, DTS can be started from that point after the film repair is made. Before starting again, verify that the cinema processor is in DTS digital format.

2.6. Playing Video Playlists

2.6.1. Video Playlists

Video playlists are defined by the video configuration disc, or its equivalent, if delivered through the network. The playlists loaded on the XD10 can only be changed by providing a new configuration file. The configuration may contain up to eight unique playlists.

2.6.1.1. Slide-loop Playlist

The slide-loop is a special type of playlist that may be played before the Preshow playlist. The slide-loop is a series of images, video clips, and audio clips that continuously loop until the Preshow playlist starts. The Preshow playlist may be started by menu, automation, or an automated start time determined by the video configuration. When the Preshow start is given, the XD10 finishes the current clip of the slide-loop before beginning the Preshow playlist.

2.6.1.2. Preshow and Intermission Playlists

The Preshow playlist is normally shown before the film starts. The Intermission Playlist is normally shown during the film intermission period. The timing of automation events may be programmed individually for both types of playlists.

2.6.1.3. Playlists C through G

Playlists C through G do not have a predefined purpose. They are available if there is a need to have separate playlists. The timing of automation events may be programmed individually for each of these playlists.

2.6.1.4. End Slides

In some cases, an “end slide” is used as the last clip in the playlist. When the end slide is used, the playlist does not automatically stop. Instead, the image continues to appear until the XD10 receives the video Stop command, or the Video Inhibit signal.

2.6.2. Start and Stop Video Playlists

There are two ways to start and stop video playlists: using menu commands or using automation.

2.6.2.1. Start and Stop Video with Menu Commands

The XD10 menus may be used to start or stop a video playlist. See Chapter 3, *Playback Menus*, for details.

2.6.2.2. Start and Stop Video through Automation

Functions to start and stop the video are also available through the menus or by automation commands. The function must be assigned to one of the automation pins through the XD10 setup menus. See the section on *Pin Definitions* in the *Audio Setup* section of Chapter 7, *System Setup Menu*s, for reference.

2.6.2.3. Playlist Schedules

The playlist schedule is defined by the video configuration file. The playlist schedule determines which playlist will be shown, based on time and date. For example, the configuration file may define a different playlist for the Preshow playlist when the playlist starts at night than when it starts during the day. In order for the scheduling to be correct, the date and time for the XD10 clock must be set correctly. If the XD10 is connected through the network and has a network time server configured, then the clock is automatically set by the program. Otherwise, the clock must be set through the menus.

☑ The clock battery must be replaced every few years if the XD10 is not connected to a network containing a Network Time Server.

2.6.2.4. Automatic Start Times

The video configuration file may contain a list of automatic start times. If automatic start times are used, then they are under control of the network, and cannot be viewed or changed by the XD10. The start times define the window of time between when the slide-loop will begin, and when the Preshow playlist will end.

The slide-loop or Preshow will not begin if the XD10 is receiving timecode or the Video Inhibit signal is active at the start time. However, the playlist will begin when both of these conditions are removed, provide that it occurs within the start window as shown in Figure 2.

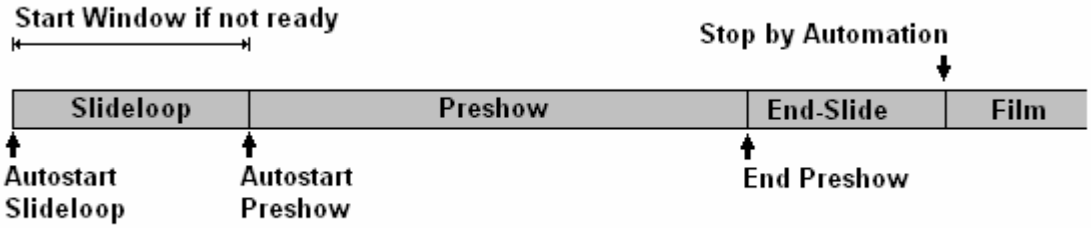


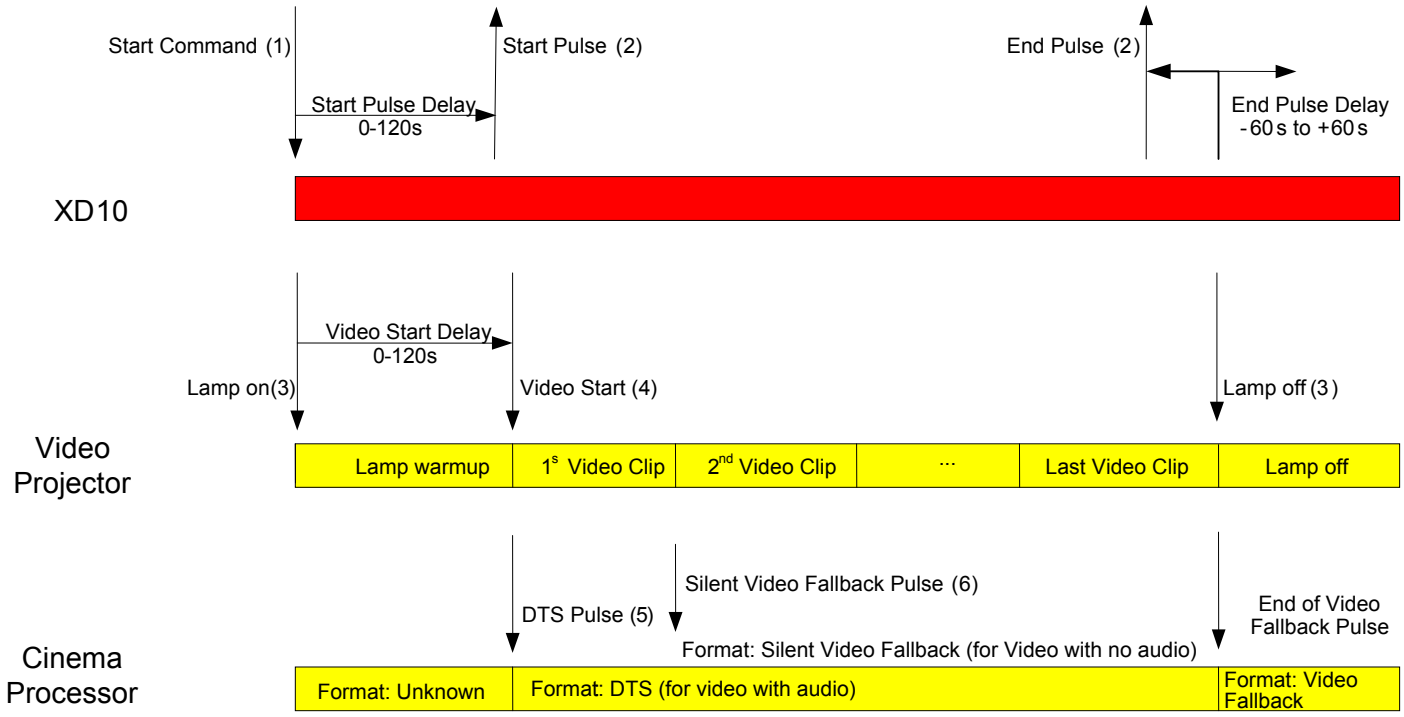
Figure 2. Automatic Start Times

2.6.2.5. Video Inhibit

The Video Inhibit function may be assigned to one of the automation pins through the XD10 setup menus. See the information on *Pin Definitions* in Chapter 7, *System Setup Menus*, to define these pins.

The XD10 will not start video playback as long as the video inhibit signal is active. The XD10 will also stop video playback immediately if this signal becomes active during the video playback.

2.6.2.6. Video Playlist Automation Sequence



2.6.3. End of Playlist

At the start of the playlist, a "Lamp on" command is immediately sent to the video projector through the serial port. The first video clip can be delayed, programmable from 0 to 120 seconds after the start, to allow the lamp to warm-up. A start pulse output may be programmed to occur from 0 to 120 seconds after the "Playlist start" command.

For video clips with audio, the XD10 will trigger the cinema processor to switch to the DTS format. For video without audio, the XD10 triggers the cinema processor to switch to the silent video format. These formats are programmable through the XD10. The format pulse occurs only at the transition from audio to no audio, or vice versa.

The XD10 may be programmed to send an end pulse near the end of the playlist. The end pulse timing may be programmed to occur from between 60 seconds before to 60 seconds after the end of the playlist (negative end pulse). The negative end pulse is useful for triggering a film projector to ramp up before the playlist ends, so that the film starts immediately after the playlist ends. In cases where the playlist is shorter than the negative end pulse offset, then the end pulse will occur at the playlist end.

The XD10 may be programmed to turn off the video projector at the end of the playlist. The XD10 may also be programmed to switch the cinema processor to a particular sound format at the end of the playlist.

2.7. XD10 Indicators and Display for Video

The video LED is lit whenever the XD10 is in process of playing a video playlist or video test content. The DTS playback LED is lit whenever the Video playlist is currently playing audio. The XD10 pulses the cinema processor to the DTS format when the DTS Playback LED goes on. The XD10 pulses the cinema processor to a specified Silent audio format or the end of the Preshow video when the XD10 "DTS Playback" LED goes off.

2.7.1. Video LCD Display

The XD10 front display shows the current status during the video playback. It is possible to enter the XD10 menus and make adjustments while the video is playing.

☑ Note that any changes made with playlist automation setup menus do not take affect until the next playlist starts.

2.7.2. Projector Warming Up Display

The XD10 sends the Projector On command (to the video projector) as soon as the playlist starts. Then, it waits for the video start delay period before displaying any video. The following shows the display during that period.

```
Projector Warming up
60 Seconds
Please wait...
```

2.7.3. Display when Playing Playlist

The following shows on the XD10 front display when the XD10 is playing video:

```
(Playlist Name)
(Segment name)
XX of YY
Fmt: (Format)
```

Display terms:

Playlist Name	Name for the current playlist. The Playlist Name is assigned in the video configuration file.
Segment Name	The name of the current playlist segment. The Segment Name is assigned in the video configuration file.
XX of YY	XX is the current segment number, while YY is the total number of segments in the current playlist.
Fmt: (Format)	Identifies the XD10 format pin selected by the XD10 or external automation system.

The following display text appears during the video playback when the XD10 is switching audio decoder formats (inside the XD10):

```
(Playlist Name)

Audio Switching
Please wait...
```

The following text displays briefly when the playlist is ending or has been stopped. Following this, the display returns to its normal state.

```
Playlist Complete

Audio Switching
```

2.8. Video Projector Support

This software supports the following video projectors:

- Sanyo PLV-70
- Sanyo PLV-WF10

The software is designed to work in a fully automated fashion with these projectors. These projectors are controlled via the XD10 serial port to support the following functionality:

- Auto-detect which video projector is connected.
- Read lamp and projector hours. These values are placed in the playlist log.
- Save video projector settings to the XD10.
- Restore video projector settings. The projector settings are sent to the video projector whenever the playlist starts and its lamp is lighted. The settings are not sent when the video is played through the video test menu. This allows you to use the test menu to adjust the projector settings on the video projector. Then you can use "Get Settings" menu command to save the video projector settings.

☑ Video projectors not listed can be used, but the XD10 will not have the functions listed above and will require an external automation controller to turn their lamps on and off.

2.8.1. Video Projector Settings

The following table lists the video projector settings that are saved by the menu command and restored for each playlist. Some settings are forced to a certain value on the projector.

Option	Value	Comment
BRIGHT	Brightness 000-063	Save/Restore Settings
CONT	Contrast 000-063	Save/Restore Settings
COLOR	Color 000-063	Save/Restore Settings
TINT	Tint 000-063	Save/Restore Settings
SHARP	Sharpness 000-015	Save/Restore Settings
GAMMA	Gamma 000-015	Save/Restore Settings
WBAL-R	White balance, red 000-063	Save/Restore Settings
WBAL-G	White balance, green 000-063	Save/Restore Settings
WBAL-B	White balance, blue 000-063	Save/Restore Settings
COLORTEMP	Color temp 000-003	Save/Restore Settings
FANSPEED	Fan Control Speed	Save/Restore Settings
KEYSTONE	Keystone setting	Save/Restore Settings
CEIL	When ON, image is top/bottom inverted	Save/Restore Settings
REAR	When Rear is ON, image is left/right reversed	Save/Restore Settings
NZRED	noise reduction ON/OFF	Force OFF
PROGV	progressive scan ON/OFF	Force ON
IMAGE	image mode (STAND, REAL, CINEMA, IMAGE1, IMAGE2, IMAGE3, IMAGE4)	Force STAND
INPUT	Select input 1-3	Save/restore
SOURCE	Select Input source DIGITAL, ANALOG, VIDEO, SVIDEO, YC, YPBPR, YCBPR, YCBCR, HD-SDI, SD-SDI	Force Digital
SYSTEM	SYSTEM OF CURRENT INPUT AUTO, NTSC, NTSC443, PAL, PAL, SECAM, PAL=M, PAL-N, 1080I60, 1080I60, 1035I, 720P, 575P, 480P, 575I, 480I	Force AUTO
SCREEN	NORMAL (4:3), FULL (16:9)	Force Full
TRUE	ON - Select TRUE, OFF - Cancels TRUE	Force ON
DISP	Set/Cancel Display	Force Off - Only on Projector 1
BBACK	Turn on/off Blue background	Force Off - Only on Projector 1
LOGO	Turn on/off Logo Display	Force Off - Only on Projector 1
LAMPMODE	Full or Half	Force Full, only works on WF-10.

3. XD10 Playback and Info Menus

This chapter describes the Playback and Info menus, submenus and their functions.

3.1. Main Menu

The Main menu is the top level menu in the XD10 menu structure. To access it, start at the LCD screen on the front panel of the XD10 when it is displaying the following message.

```
Ready
```

Press the **Enter** button and the Main menu, shown below, will display on the screen.

```
MAIN MENU
• Playback
• Setup
• Info
• Exit Menus
```

Main Menu

Commands:

Playback	Enter a sub menu to access all of the operator functions: playing soundtracks, videos and CSS content, checking Video Playlist, Soundtrack, CSS Playback, External S/PDIF, and Contents. See Section 3.2, *Playback Menus*.
Setup	The menus included here are typically set in installation and are not used in normal operation. See Chapter 7 for setup menu descriptions. Entry to the Setup menus may be password protected to protect the integrity of the configuration parameters.
Info	Enter the Info menu to access information on the software version number, licenses installed, and the system's MAC address.
Exit Menus	Return to the status display.

3.2. Playback Menu

The **Playback Menu** contains the sub menus for the operator functions described below.

```
PLAYBACK MENU
• Video
• Film
• External S/PDIF
• Load from USB
• Exit Menus
```

Main Menu → Playback

Commands:

Video	Use this menu to start, stop or control video playback; or to view video contents. This menu is locked out if the XD10 does not have the HD Video Option installed.
Film	Use this menu to change playback parameters relating to feature film and trailer soundtrack and CSS playback.
External S/PDIF	Use this menu to allow the XD10 to route audio from the external S/PDIF input on the rear panel out to the cinema processor.
Load from USB	Enter this menu to load XD10 video content or XD10 licenses from a USB storage device instead of from a CD.
Exit Menus	Return to the status display.

3.2.1. Video Playlist Functions

The Video Playlist menu, shown below, contains functions to start, stop and control video playback.

```
VIDEO PLAYBACK
• Start
• Stop
• Play ACV
• Control
• Contents
• Exit Menus
```

Main menu → Playback → Video

Commands:

Start	Start playing one of the playlists currently installed on the XD10.
Stop	Stop the playlist that is currently playing.
Play ACV	Play Alternate Content Video
Control	Control video using commands to fast forward, rewind, pause, resume, or seek to a specific position in the currently playing clip.
Contents	This menu displays information about videos and playlists installed on the XD10. Note: The XD10 will delete old content automatically when the hard drive is full. The user does not have the ability to selectively delete video content at the XD10.

☑ Note: You cannot gain access to this menu unless your XD10 has the Video Option installed.

An XD10 unit must have a license for the HD Video Option in order to play video. If it doesn't, the following message will appear when you try to access the Video Playlist.

```
Video Playback
Is not enabled
License required.
```

Main menu → Playback → Video

If the video card is not installed or does not work, the following message will appear.

```
Video Hardware
is not installed.
```

Main menu → Playback → Video

Contact DTS Technical Service for more information for assistance at 1 (800) 959.4109 from within the USA or +1 (818) 401.4253 from outside the USA.

3.2.1.1. Start Playlist Functions

```
Start Playlist
```

```
•(*) Slide Loop
•( ) Preshow
•( ) Intermission
•( ) Playlist C
•( ) Playlist D
•( ) Playlist E
•( ) Playlist F
•( ) Playlist G
•    Exit Menus
```

Main menu → Playback → Video → Start

To start a playlist, scroll to the desired playlist type and press **Enter.** The selected playlist will begin and the asterisk will move to the left of the selection.

The playlist will not start while the XD10 is receiving timecode or the Video Inhibit signal is active. Provided that the start command has been given through automation, the XD10 will automatically start after timecode has stopped for 10 seconds as long as the timecode ends within one minute of the command being given.

All of these playlist functions are also available as automation controls.

☑ **Note**: If no playlist is loaded, the XD10 executes the entire automation sequence (lamp on, start pulse, lamp warm-up delay) without playing any video.

3.2.1.2. Stop Playlist

```
Stop Playlist
•(*) Stop
•( ) Stop at End
•    Exit Menus
```

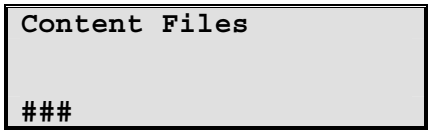
Main menu → Playback → Video → Stop

Commands:

Stop	Immediately **s**tops the playlist that is currently playing.
Stop at End	Stops the playlist that is currently playing once it reaches the end of the current clip.

These functions are also available as automation controls.

3.2.1.3. Play ACV (Alternate Content Video)



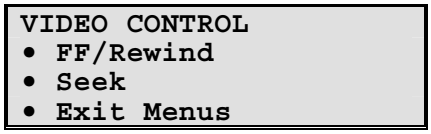
Main menu → Playback → Video → Play ACV

Playing the alternate content video is similar to the playback of a video playlist.

Start and Stop

- Start the video through the menu **Playlist→Video→PLAY ACV → [Show Name].**
- Stop the video through the menu **Playlist → Video → Stop → Stop.**

3.2.1.4. Video Control

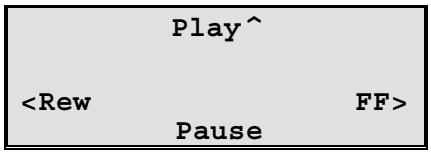


Main menu → Playback → Video → Control

Commands:

FF/Rewind	Enters a menu to control playback using commands to fast forward, rewind, pause, and play,
Seek	Enters a menu to control playback by moving to a specific position in the current clip.

3.2.1.4.1.FF/Rewind



Main menu → Playback → Video → Control → FF/Rewind

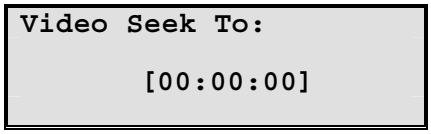
Commands:

Play	**Up arrow**	Restarts playback after pause command.
Pause	**Down arrow**	Pause the current video playback.
Rew	**Left arrow**	Play video in reverse direction. Press again to increase the **reverse speed.**
FF	**Right arrow**	Fast forward the playback. Press again to increase the forward speed.
Enter		Return to the previous menu.

3.2.1.4.2.Seek

This menu allows you to seek to a specific point in the currently playing clip. It displays the seek position in terms of hours, minutes, and seconds. Use the keys to change the position and then start the playback at that position.

This will only seek to a point in the clip that is currently playing; it will not seek throughout the whole playlist.



Main menu → Playback → Video → Control → Seek

Commands:

Up	Increase the seek position by 10 seconds.
Down	Decrease the seek position by 10 seconds.
Enter	Start the video playback at the position displayed.

3.2.1.5. Video Contents

```
VIDEO CONTENTS
• Content Files
• Start Times
• Schedules
• Playlists
• Exit Menus
```

Main menu → Playback → Video → Contents

These menus display information about the playlists that are currently installed on the XD10.

3.2.2. Film Playback

```
FILM PLAYBACK
• TC Reader Offset
• Soundtrack
• CSS Playback
• Contents
• Exit Menus
```

Main menu → Playback → Film

Use these menus to change parameters related to movie soundtrack and CSS playback.

3.2.2.1. TC Reader Offset

This menu allows you to set the offset for either a 35mm or a 70mm timecode reader head.

```
TC Reader Offset
•(*) 35mm
•( ) 70mm
•    Exit Menus
```

Main menu → Playback → Film → TC Reader Offset

Options:

35mm	Use the timecode reader offset value that has been configured for 35mm film playback
70mm	Use the timecode reader offset value that has been configured for 70mm film

This control is also available through automation.

3.2.2.2. Soundtrack Language

Some XD10s may be configured to play different language versions (also know as dubs), provided the soundtrack disc in the selected language for that film has been loaded. This feature is available only when the Language Versions option is enabled during the XD10 setup.

If Language Versions is not enabled, then the XD10 will only load and play one version of the soundtrack for the feature or trailer. Loading a second language for a soundtrack will overwrite the first language. To enable language versions see section 7.2.3.

The Soundtrack Language menu, shown below, is the second selection on the Playback menu. It is used to select the language to be used with a particular soundtrack.

```
Soundtrack Language
• ( )Automation
• (*)Last Installed
• ( )<language options>

•    Exit
```

Main Menu → Playback→ Film→ Soundtrack

Options:

Automation This selection allows automation to select the playback language. This option is applicable only if the XD10 is setup to use automation for languages. See Section 7.6.3, *Language Setups*, in Chapter 7, *System Setup Menus*, for more information.

Last Installed When this option is selected, the XD10 plays the language version last installed for the feature soundtrack being played.

<Language Options> This will be a list of all the language versions of all the installed soundtracks on the XD10. The feature soundtrack being played will be played in the language that was specifically selected, provided that soundtrack has been loaded on the XD10.

☑ **Note**: If the selected language does not exist on the hard drive, then the DTS soundtrack will not play, and the XD10 will switch the cinema processor to analog.

3.2.2.2.1.Language Versions Disabled

If Language Versions is not enabled, then the following message will appear when selecting **Soundtrack** from the Playback menu.

```
Not Available:
Language versions
Is disabled.
```

3.2.2.3. CSS Playback

The CSS Playback menu allows you to set the CSS Mode, set the CSS language and view the CSS projector lamp hours. To access this menu, select **CSS Playback** from the Film menu. The following menu will appear on the screen.

☑ Note: You cannot gain access to this menu unless your XD10 has the CSS Option installed.

```
CSS Playback
• CSS Mode
• CSS Language
• CSS Lamp Hours
• Exit Menus
```

Main menu → Playback → Film → CSS Playback

Options:

CSS Mode	Specify whether to show subtitles.
CSS Language	Select the subtitle and caption languages.
CSS Lamp Hours	View CSS Projector Lamp hours.

3.2.2.3.1.CSS Mode

This menu allows enabling or disabling of CSS captions

```
CSS Mode
•( )Off
•( )One Show Only
•(*)On
•   Exit Menus
```

Main menu → Playback →Film → CSS Playback → CSS Mode

Options:

Off	Do not show subtitles or captions
One Show Only	Show subtitles and captions for one show. This option turns the subtitle projector lamp on and plays back all available CSS files for one show only. After the show is over, the subtitle projector automatically turns off, after a short cool-down period, and the CSS system remains off.
On	Show subtitles and captions. When this option is selected, the subtitle projector lamp turns on for every show and CSS files play back at every show.

3.2.2.3.2.Shortcut to CSS Mode

To select a CSS mode without navigating the menu structure, use the following shortcut from the status display:

1. From the "READY" screen, select the down or up arrow until **CSS Mode:** appears on the bottom of the screen.
2. Hold down the right arrow key and press the **Enter** button to scroll through the three options.

- Off
- One Show Only
- On

3. When you reach the desired mode, simply release the **Enter** button and the **Right arrow** button. This selection has the same effect as entering a selection in the CSS mode menu.

3.2.2.3.3.CSS Language

This menu allows selection of the language for the subtitles and captions.

```
CSS Language
•(*)Automation
•( )English Captions
• Exit Menus
```

Main menu → Playback → Film → CSS Playback → CSS Language

Options:

Automation	The language will be specified by Automation Controls. Use this selection when CSS has been set up to switch automatically between languages when controlled by the theater automation. See Appendix J, *Installing CSS*, for more information.
English Captions	The selected language will be used for subtitles and captions. As other languages are added, they will appear as selections. *English Captions* is the default in this system.

3.2.2.3.4.Cinema Subtitling Projector Lamp Hours

This menu displays the number of hours the cinema subtitling projector lamp has been used. This makes it easy to replace the lamp before it fails. For example, if a lamp has been used for 20 hours, the following message will appear on the screen.

☑ This lamp, which is part of the CSS kit, is referred to as the cinema subtitling projector lamp in the manual text, the CSP Lamp in the label for the warning light on the front panel of the XD10, and the CSS Lamp in the XD10 screen messages.

```
CSS Lamp Hours:

        20 hours
```

Main menu → Playback → Film → CSS Playback → CSS Lamp Hours

☑ The cinema subtitling projector lamp must be replaced after 1,400 hours of use. The front panel "CSP Lamp Fault" LED will flash when 1400 hours are reached. The CSP Lamp Fault LED will illuminate consistently when the cinema subtitling projector lamp has failed.

If the cinema subtitling projector lamp is damaged, has failed, or has been removed from the projector, the following message will appear on the screen.

```
CSS Lamp Hours:

    (Unavailable)
```

Other reasons for receiving this message are:

- Power to the projector is not on.
- There are communication (cable) problems.
- The system is not connected to a DTS cinema subtitling projector.

3.2.2.3.5.CSS Not Enabled

If an XD10 is not equipped with the CSS Option, the CSS Playback menu will be locked. An attempt to access it will generate the following message on the screen.

```
CSS playback
is not enabled.
License required.
```

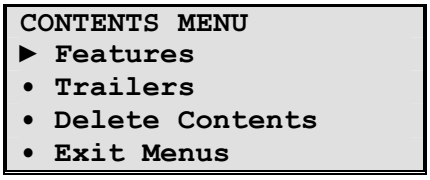
In order to access the CSS Playback menu, you must obtain a CSS license from DTS in order to use the CSS option. The license will be "keyed" to your XD10 unit. CSS licenses cannot be shared with other XD10s.

You can find out what licenses have been installed on your XD10 by selecting **Main Menu → Info → Licenses**. Once your XD10 unit is licensed for the CSS Option, the CSS Playback menu will be available to you.

3.2.2.4. Contents Menu

The film soundtrack and CSS content may be viewed and deleted through the Contents menus.

To access the contents menu, select **Contents** from the Film menu, and press **Enter**. The Contents menu, shown below, will display.



Main menu → Playback →Film → Contents

Options:

Features	Lists any feature films titles that have soundtrack or CSS content on the XD10.
Trailers	List any that have soundtrack or CSS content on the XD10.
Delete Contents	Delete selected contents from the XD10 hard drive. This includes the following contents available through DTS Access™: subtitling, captions, and narrations.

3.2.2.4.1.Display Feature Contents

From the Contents menu, select **Features.** The XD10 displays a list of features for which soundtrack or CSS content is loaded on the XD10.

```
Contents: Features
• (Feature 1 name)
• (Feature 2 name)
• . . .
  # # #
```

Main menu → Playback → Film → Contents → Features

Feature films will be listed in the order of the last played or loaded onto the XD10. Scroll up and down the menu to view the entire list. Put the cursor on the feature name and press **Enter** to view content loaded for that feature, as shown below. Use the **Up** and **Down** arrow buttons to scroll through all of the content files for that feature.

```
(Feature name)
SN 05615
CSS Text Size = 100
English Captions
```

Line 1	Contains the feature name.
Line 2	Contains the feature serial number.
Line 3	File type: Subtitle, Captioning Text, Narrative, or Soundtrack. CSS Subtitle files require a file for each text size. The Subtitle file size is listed on this line.
Line 4	Shows the language for the soundtrack or Subtitle file.

3.2.2.4.1.1. Subtitle File

The display status screen below shows an example of the display for a Subtitle file.

```
(Feature name)
SN 05615
CSS Text Size = 100
English Captions
```

Main menu → Playback → Film → Contents → Features→ (Feature Name)

3.2.2.4.1.2. Caption File

The display status screen below shows an example of the display for a Captioning Text file.

```
(Feature name)
SN 05615
Captioning Text
```

Main menu → Playback → Film → Contents → Features→ (Feature Name)

3.2.2.4.1.3. Narrative File

The display status screen below shows an example of the display for a Narrative file. Narrative files require one file for each reel. These have the reel number. An "L" after the reel number indicates that it is the last reel of the film (so the fallback becomes nonsync near the end of the reel).

```
(Feature name)
SN 05615
Narrative: Reel 13
```

Main menu → Playback → Film → Contents → Features→ (Feature Name)

3.2.2.4.1.4. Soundtrack File

The display screen below shows an example of a Soundtrack File. Like Narrative files, Soundtrack files require one file for each reel. These have the reel number. An "L" after the reel number indicates that it is the last reel of the film (so the fallback becomes nonsync near the end of the reel).

```
(Feature name)
SN 05615
Soundtrack: Reel 7L
(*) English
```

Main menu → Playback → Film → Contents → Features→ (Feature Name)

3.2.2.5.

3.2.2.5.1.Trailer Contents

From the Contents menu, select **Trailers** and the XD10 displays a list of trailers for which soundtrack or CSS content is loaded on the XD10.

```
Contents: Trailers
• (Trailer 1 name)
• (Trailer 2 name)
• . . .
  # # #
```

Main menu → Playback → Film → Contents → Trailers

Position the cursor next to the trailer name and press **Enter** to view content loaded for that trailer, as shown above for features. Use the Up and Down arrow buttons to scroll through all of the content files for that trailer.

3.2.2.5.1.1. Trailer File

The display below shows an example of the contents for a trailer file. The abbreviated name of the trailer is shown, followed by the DTS serial number .for that trailer, the type of content file, and the language.

```
(Trailer name)
SN 05615
Soundtrack: Reel 14
(*) English
```

Main menu → Playback → Film → Contents → Trailers → (Trailer Name)

3.2.2.5.2. Delete Contents

From the Contents menu, select **Delete Contents** to display the menu shown below. This menu allows deletion of selected soundtracks for features or trailers, or all soundtrack and CSS files.

```
DELETE CONTENTS MENU
• All
• Features
• Trailers
• Exit Menus
```

Main menu → Playback → Film → Contents → Delete Contents

Video and test content can't be deleted through these menus.

3.2.2.5.2.1. Deleting All Contents

From the Delete Contents menu, select **All** to delete all feature and trailer contents loaded on the XD10. The menu shown below will appear to confirm that all of the content is to be deleted.

```
Delete All
Contents/
► No (Cancel)
• Yes (Delete)
• Exit Menus
```

Options:

No Do not delete any contents. The following message will display:

```
   Delete contents
      aborted !

    Press [Enter]
```

Yes Delete all feature and trailer content loaded on the XD10. The following message will be displayed while the content is being deleted.

```
Delete in progress
```

After several seconds (depending on the number of files), the following message will appear:

```
     All contents
  Have been deleted !

     Press [Enter]
```

Exit Menus Do not delete any content and return directly to the status display.

3.2.2.5.2.2. Delete Features

The Delete Features menu allows you to delete all soundtrack and CSS content associated with a selected feature. From the Delete Contents menu, select **Features** to display the menu below.

```
Delete Features
▶ Feature 1
• Feature 2
• . . .
  # # #
```

Move the cursor to the desired feature and press **Enter.** The following menu will display:

```
Delete Features
Contents?
▶ No (Cancel)
• Yes (Delete)
• Exit Menus
```

Options:

No Do not delete any contents. The following message will display:

```
    Delete contents
       aborted !

     Press [Enter]
```

Yes Delete all soundtrack and CSS content files for the selected feature. The following message will be displayed while the content is being deleted.

```
Delete in progress
```

After a few seconds (depending on the number of files), the following message will appear:

```
All material for:
(Feature name)
Has been deleted!
     Press [Enter]
```

Exit Menus Do not delete any content and return directly to the status display.

3.2.2.5.2.3. Delete Trailers

The Delete Trailers menu allows you to delete all soundtrack and CSS content associated with a selected trailer. From the Delete Contents menu, select **Trailers** to display the menu below.

```
Delete Trailers
▶ Trailer 1
• Trailer 2
• . . .
  # # #
```

Move the cursor to the desired trailer and press **Enter**. The following menu will display:

```
Delete Trailer
Contents?
▶ No (Cancel)
• Yes (Delete)
• Exit Menus
```

Options:

No Do not delete any contents. The following message will display:

```
    Delete contents
       aborted !

     Press [Enter]
```

Yes Delete all soundtrack and CSS content files for the selected trailer. The following message will be displayed while the content is being deleted.

```
Delete in progress
```

The following message will appear immediately afterwards:

```
All material for:
(Trailer name)
Has been deleted!
     Press [Enter]
```

Exit Menus Do not delete any content and return directly to the status display.

3.2.3. External S/PDIF Mode

This menu allows the XD10 to route audio from the external S/PDIF input to the cinema processor and select routing options for PCM audio. The selection will not be saved when the XD10 restarts.

```
External S/PDIF Mode
▶ (*) Disable
• ( ) DTS
• ( ) PCM: Front
• ( ) PCM: Surround
• ( ) PCM: All
• ( ) PCM: NEO:6
• Exit Menus
```

Main Menu → Playback → External S/PDIF

Options:

Disable Disables the S/PDIF mode for normal operation. Note: When returning to "Disable" from one of the PCM modes, the XD10 must be rebooted before audio is restored.

DTS Decodes DTS bit-stream from the S/PDIF input to 5.1 channels. This selection also processes PCM to the Left and Right channels.

PCM:Front Accepts 2-channel PCM audio from the S/PDIF input and routes it to the front left and front right channels.

.

PCM:Surround Accepts 2-channel PCM audio from the S/PDIF input and routes it to the left surround and right surround channels.

PCM:All Accepts 2-channel PCM audio from the S/PDIF input and routes the left channel input to the left front and left surround channels, and the right channel input to the right front and right surround channels.

PCM: NEO:6 Accepts 2-channel PCM audio from the S/PDIF input and uses NEO:6 decoding to route it to all 6 channel outputs.

When a selection is made, it will take a few seconds until the XD10 is ready for use. The following message will appear during that time.

```
Please Wait
S/PDIF input switch
in progress
```

When the mode you selected is enabled, the DTS Playback indicator will illuminate and the XD10 status display will display the following message, indicating that XD10 is processing audio from the S/PDIF input.

```
External S/PDIF Mode
```

3.2.4.

3.2.5. Load from USB

```
PLAYBACK MENU
• Video
• Film
• External S/PDIF
• Load from USB
• Exit Menus
```

Main Menu → Playback→ Load from USB

This option allows content that is stored on a USB storage device to be uploaded to the XD10. The USB device, which may be a drive or a memory device, must contain either FAT32 or EXT2 file format. The content must be present on the USB device in the exact format as it appears on the equivalent disc (such as a video disc or software update disc).

☑ Film content cannot by loaded through the USB port.

XD10 Software Update. Load an XD10 update through the USB device. (This does not apply to a full XD10 software install disc).

DTS XD10 feature option license.

Video playlist and/or content.

```
Please insert USB
Memory device

[ENTER] -Abort
```

The above menu appears until the XD10 detects the USB device connected. The procedure then occurs automatically with the same messages that appear when loading a disc.

3.3. Info Menu

The Info Menu contains information about the XD10 software, licenses and MAC address. The MAC address is used to uniquely identify an XD10 unit.

```
INFO MENU
• Version
• Licenses
• MAC Address
• Exit Menus
```

Main menu → Info

Commands	
Version	Displays XD10 software version information.
Licenses	Shows which licenses are installed for this XD10.
MAC	Displays the XD10 MAC address.
Exit Menus	Returns to the status display.

3.3.1. Version

The **Version Menu** displays information about the software installed in the XD10.

```
DTS-XD10 2.1.00
May 3 2007 12:03:23
General Model
Copyright (c) 2007
By DTS, Inc.
Large Drive
```

Main menu → Info → Version

Line 1	Identifies the software version number.
Line 2	Displays the software date and time.
Line 3	If display is other than "General Model", then there something unique in the software for loading specific video discs.
Line 4,5	Displays the copyright notice.
Line 6	Displays hard drive information. If the drive is 40G then it is too small to handle video playlists. In this case this line will display **Hard Drive = 40G**, otherwise it will display Large Drive.

3.3.2. Licenses Menu

This menu displays which licenses are installed in the XD10. You must use the Up and Down arrow buttons to scroll to view all license options. An asterisk in the brackets indicates that the license type described on the line has been installed.

```
Installed Licenses:
[*] Soundtrack
[*] CSS
[*] Video
[*] Cinecast
```

Main menu → Info → Licenses

Soundtrack	License for playing film soundtracks.
CSS	License for playing DTS-CSS or DTS Access™ content. This includes CSS subtitles or captions, Audio Description, and Rear Window™ captions. It is NOT necessary to have a Video license (described below) to play CSS subtitles or captions to a standard video projector.
Video	High definition video license. This is part of the High Definition Video option that also includes a hardware upgrade. The soundtrack license is NOT required to play audio with the video playlist.
CineCast Server	This license is required to connect to a DTS Cinema Media Network™ server.

3.3.3. MAC Address

This menu displays XD10 MAC address that uniquely identifies the XD10. The 18 character string on line 3 will be unique for each XD10.

```
DTS-XD10 MAC addr:

   00:01:80:5B:E8:85
```

Main menu → Info → MAC Address

.

4. Maintenance and Troubleshooting

Check the DTS Online TechCenter for the latest technical information at www.dts.com/digitalcinema for the latest information on maintenance, troubleshooting, and XD10 software versions.

4.1. Routine Maintenance

- **Every day**: Use compressed air to blow dust off the Timecode Reader's lens.
- **Every six months – or as needed**: Clean the DVD drives using a DVD cleaning disc.
- **After three months service – and every six months afterwards**: If your DTS Timecode Reader Head does not have an RoHS sticker on it, check and recalibrate the DTS Timecode Reader Head's voltage using TN-E550. (You can see TN-E550 on the free DTS Online TechCenter located on the DTS website at www.dts.com/cinema.) DTS Timecode Reader Heads with stickers indicating that they are RoHS compliant do not require this adjustment.
- **Every three years:** Have a technician change the battery on the motherboard. Instructions for the technician are listed in Appendix I, *Technical Maintenance*.

4.2. XD10 Soundtrack Check

After installing and setting up the unit—or doing a maintenance check—it is a good idea to play content and stand in the theater while listening to the first few minutes of the movie. Check for the following:

- The overall sound level is comfortable and balanced.
- The DTS soundtrack quality is excellent and does not include extraneous noise.
- The dialog is in sync with the picture being projected.
- The surround speakers are heard at the correct level. (Please note that not all scenes will have surround material.)

To adjust the overall sound level in the theater, adjust the main fader on the cinema processor.

⚠ If you are having soundtrack playback problems, first check the contents to be sure the soundtrack that was loaded is the soundtrack for the film you are playing. Feel free to contact DTS Technical Service for assistance. Contact information for the US is listed below. Contact information for Europe and Japan is listed on page x of this guide.

DTS Technical Service
5171 Clareton Drive
Agoura Hills, CA 91301

Email: techsupport@dts.com
Phone: +1 (818) 401.4253 or in USA +1 (888) 428.2268
Technical Service Fax +1 (818) 879.2746

4.3. Frequently Asked Questions

4.3.1. I Have a DTS Print but No Discs

1. Check the hard drive to see if the movie soundtrack has already been loaded. From the Ready message on the LCD screen, press **Enter** → **Playback** → **Contents** → **Features** to view the list of all soundtracks loaded in the XD10 hard drive.
2. If the soundtrack is not listed in the XD10 contents, find the feature's soundtrack disc and load it into the XD10. If you cannot find the soundtrack disc, contact the film distributor and request the disc.

☑ Remember that a film that runs less than 90 minutes will have only one movie disc. It should be labeled "**one disc only**." Movies running over 90 minutes will have two discs. Occasionally, you may encounter a 3+ hour long film and those normally have three discs, with special show instructions.

4.3.2. Film Is Not in Sync or Does Not Sound Right

⚠ Do not attempt to remedy these problems while playing in DTS.

1. Turn off the XD10 unit.
2. Listen and verify that the movie is playing properly in the analog (usually SR) format.
3. Let the film finish playing in analog.
4. Ask the theater technician to perform a full DTS quality check and verify sync with the demo film. Give the technician at least one hour to complete the test and alignment. (See Sections 7.1, *TC (Timecode) Reader Offset*, for sync, and 7.2.2, *Audio Setups*, for channel calibration.)

4.3.3. Volume Is Too Loud

⚠ Do not adjust the XD10 audio level from the menu controls.

1. Turn down the fader on the cinema processor.
2. If the sound level needs adjustment after the cinema processor has switched to DTS digital, contact your theater technician and request a DTS sound check.

4.3.4. XD10 Does Not Play Soundtrack Audio to Film

4.3.4.1. Timecode LED Is Blinking

If the XD10 is not playing digital audio, first check to see if the timecode LED on the front panel is illuminated. If it is illuminated, but is blinking, then check the following:

1. If the reader's LED is dark, check to make sure that the film is threaded correctly through the DTS Timecode Reader and that the film has a timecode strip (located between picture and analog sound tracks).
2. If you do not see a timecode strip (dots & dashes) between the analog soundtrack and the picture, call the film distributor and request a DTS print.
3. If the film does have timecode and the soundtrack is seen on the hard drive, then verify that the reader's LED voltage using TN-E550.You can access TN-E550 at the online Tech Center at www.dts.com.

⚠ **Never adjust the lens on the DTS Timecode Reader Head**.

4. If the timecode LED is blinking, and the XD10 is dropping out of digital after the items listed above have been checked, call your theater technician for a system test. Ask the theater tech to refer to TN-E698, which is posted on the free online Tech Center at www.dts.com.

☑ Note: Later versions of the reader head do not require adjustment. These heads can be identified by the "RoHS" sticker on them.

4.3.4.2. Timecode LED is Solid, but Playback LED is Not Lit

If the XD10 timecode LED is on solid, but the blue DTS Playback LED is not lit, then check the following:

1. Verify that the soundtrack is loaded on the XD10 hard drive. From the *Ready* message on the LCD screen, press **Enter → Playback → Contents → Features** to view the list of all soundtracks loaded in the XD10 hard drive
2. If it is not listed, find the disc and load it. The soundtrack must be loaded onto the hard drive before you can play in the DTS digital format.
3. Verify that the DTS soundtrack discs match the film by checking the feature title on the disc label and the feature language.

4.3.4.3. Playback LED is Flashing at Regular Intervals

If the DTS Playback LED is flashing at regular intervals, then the XD10 is reporting that it is not in the DTS format. This would occur in the following situations:

- The automation system may have selected a different audio format after the XD10 had switched to the DTS optical formats before switching to the DTS format.
- If the automation mode is set to auto-switch, then the XD10 expects that the automation system first selects one of the optical formats—Mono, A, SR(1) or SR (2)—before switching to the DTS format. If one of the optical formats is not selected, then the XD10 does not pulse the DTS format, and the DTS Playback LED blinks.
- If the automation mode is set to pre-select, then the XD10 expects that the automation system first selects the DTS format. If the DTS format is not selected first, then the XD10 does not pulse the DTS format, and the DTS Playback LED blinks.

4.3.5. XD10 Switches Out of DTS Digital

1. If the XD10 does not see timecode for four seconds, the XD10 automatically switches the Cinema Processor to the default analog (usually SR). Verify that the green LED on the DTS Timecode Reader Head is glowing brightly and steadily while the film is running.
2. If the Timecode LED on the DTS XD10 or reader head is blinking, check the reader's voltage, using TN-E550. TN-E550 is posted on the online Tech Center at www.dts.com.
3. If the timecode light still does not illuminate steadily while film with timecode is running, use TN-E698 to troubleshoot the problem. TN-E698 is posted on the online Tech Center at www.dts.com.
4. Verify that all sound cues from automation are completed before timecode starts or after it ends. If the sound format switches back to SR after the feature starts, then it is possible that automation is switching the cinema processor and overriding the XD10 pulse to digital. To avoid this, add some black leader before the start of timecode for the feature. It will give automation time to pulse the cinema processor to SR. Then when DTS timecode is seen, the XD10 will pulse the cinema processor to digital, and it will stay there as long as valid timecode is seen by the XD10.
5. As a last resort, force the unit to play in optical mode. Turn off the XD10 and verify that the cinema processor switches to optical. If it does not, press the desired format button on the cinema processor. Contact your Theater Technician and request a DTS system check.

4.4. Display Error Messages

4.4.1. Program Fault

The following message will appear on the XD10 front panel display if the XD10 program stops running or gets "hung up" for any reason (an unspecified problem with the unit).

```
Error Detected
Program Fault

Player Disabled
```

If this occurs when playing digital format, the XD10 will switch the cinema processor to the predefined fallback format (usually SR).

The error may disappear or the XD10 may reset itself after power is cycled (power off, then on again). However, if the problem persists, contact DTS Technical Service for assistance at 1 (800) 959.4109 from within the USA or 1(818) 401.4253 from outside the USA.

4.4.2. Menus Do Not Function

Certain menus on the XD10 are locked out because the functions are disabled, either due to a mode setting, or because a license is required.

1. The following message appears when Video Playlist is selected from the Playback menu—or Video is selected from the Setup menu—and the Video license is not installed on the XD10.

```
Video playback
is not enabled.
License required.
```

Main menu → Playback → Video

2. The following message appears when Video Playlist is selected from the Playback menu—or Video is selected from the Setup menu—and the video hardware is either not installed or not working.

```
Video Hardware
is not installed.
```

Main menu → Playback → Video

3. The following message appears when CSS Playback is selected from the Playback menu—or CSS is selected from the Setup menu—and a CSS license is not installed on the XD10.

```
CSS Playback
is not enabled.
License required.
```

Main menu → Playback → Film → CSS

4. Selected XD10s with CSS or Video Options may be configured with the soundtrack audio capability disabled. When the soundtrack audio is disabled, the XD10 will not play DTS audio soundtrack with film. However, the unit will still function for video sound playback or external S/PDIF input.

   If an XD10 unit does NOT have soundtrack capability, the following message will display.

```
Soundtrack Audio
is not enabled.
License required.
```

Main menu → Playback → Film→ Soundtrack

4.5. Guide For a Seamless Change-Over

When you are running a DTS movie with dual projectors, the picture and sound may not change at the same time during a change-over. The reason is that as soon as the first frame of action reaches the picture aperture on the incoming projector, the DTS Digital Sound® will change over to that reel. DTS Digital Sound® changes independently of the projector's douser position. Change-over anomalies are most evident on movies that have very tight editing / scene-change tolerances from the end of one reel to the start of the next reel.

When this occurs, perform one of the adjustment procedures below.

4.5.1. Sound Changes Before Picture

When threading the incoming projector, roll down the film to a greater number of feet. If you normally thread to "8", try threading to "9" or "10." Keep adjusting the roll-down setting until the picture changes with the sound. Also, try hesitating a second before starting the incoming projector on the first cue.

4.5.2. Determining Roll-Down

Adjusting the roll down setting is a judgment call. Base it on the time delay of the picture vs. sound. One second of delay equates to 24 frames, or 1.5 feet.

Part 2: Installation and Setup

The remaining chapters in this manual describe the information the technician needs to install and configure the XD10 cinema media player. The chapters are:

- Hardware Installation
- Installing Licenses and Upgrading Software
- System Setup Menus

5. Hardware Installation

This chapter covers the following:

- Unpacking XD10 components
- Mounting and Connecting Cinema Media Player
- Power Supply
- Installing DTS Timecode Reader Head
- Connecting to Other Cinema Processors

Additional information can be found in:

- Appendix A: Pinout Connectors
- Appendix B: Cinema Processor Interface Wiring Diagrams
- Appendix C: CSS and HD Video Option Wiring Diagrams
- Appendix D: Cable Assemblies and Breakout Cards
- Appendix E: TC Reader Head Mounting Brackets
- Appendix F: System Parts List
- Appendix G: Specifications
- Appendix H: Menu Structure
- Appendix I: Technical Maintenance
- Appendix J: Installing CSS
- Appendix K: Tech Notes

☑ You can also refer to the Installation Checklist at the beginning of this guide.

5.1. Unpacking System Components

The following is a list of the standard components for an XD10 shipment. The exact contents will vary, depending on the options you have ordered.

- XD10 Cinema Media Player and power cord
- DTS Timecode Reader Head
- Reader Head mounting bracket and screws
- DTS Timecode Reader Head interconnect cable
- Audio and automation cables (the exact model of cables and other interface components will vary, depending on the cinema processor the XD10 is connected to. See Appendix D, *Cable Assemblies and Breakout Cards* and Appendix E*, TC Reader Head Mounting Brackets*, for details.)
- Digital Output Cable (if the XD10 has this option)
- Installation Hardware (screws, brackets)
- The XD10 Installation and Operation Guide
- DTS trailer (logo) films, 2 scope and 2 flat

☑ Refer to the actual packing slip from your order to verify the contents of your shipment. Contact DTS immediately if items listed on your packing slip are missing.

5.1.1. Preliminary Inspection

☑ Before installing the XD10, take a complete inventory of system components to minimize problems or questions during installation. Additionally, save all packing materials until installation is complete in case you need to return parts to the factory.

5.2. Installation Procedures

The XD10 Cinema Media Player is the main component of the XD10 system. Installation procedures include:

- Mounting the XD10 in a rack
- Connecting the XD10 to a cinema processor
- Connecting the XD10 to a power supply
- Installing the DTS Timecode Reader Head (for soundtrack or DTS Access™ content: subtitling, captions and narration.

☑ If you have a license for the DTS-CSS Option, follow the procedures in Appendix J, *Installing DTS-CSS*, after following the procedures in this chapter.

5.2.1. XD10 Player Installation

5.2.1.1. Rack Mounting and Connection

The XD10 player is designed to integrate into your existing theater sound system without affecting normal theater operation. All interconnects are standalone and most systems require no cuts or jumpers.

The XD10 requires 3U of standard rack space (5 1/4 x 15 x 19 inches) for proper mounting. Select a space in the sound rack within three feet of the cinema processor to which you are connecting.

1. Bolt the XD10 into the selected rack space.
2. Check that the XD10 front panel power switch is in the OFF position.

   ☑ **Caution**: Because the XD10, like any other computer-based system, can be damaged by power line surges, we recommend using a computer-grade surge/spike suppresser.
3. Connect the analog and logic cables/cards to your cinema sound processor. (See Appendix B for wiring diagrams and Appendix C for cable assembly diagrams, including installation into sound racks containing digital sound systems from Dolby® and/or Sony.)
4. If installing to a SMART cinema processor, contact SMART directly at (800) 45-SMART. DTS does offer SMART interface cables: for MODVI or VII use DTS #E709.
5. Connect the supplied power cable between the XD10 and your power source.

5.2.1.2. Rack Mount Recommendations

Follow these recommendations if the XD10 is installed in a closed or multi-unit rack assembly.

- Determine the maximum and ambient temperatures within the rack, since they may be greater than the maximum and ambient temperatures in the room. The maximum temperature for the equipment in a closed or multi-rack assembly is 50°C (122F°)
- Ensure adequate airflow for cooling purposes on all sides of rack-mounted equipment. Make sure that ventilation fans and louvers are not blocked.
- Check nameplate ratings to ensure there is no overloading of supply circuits that could have an effect on over-current protection and supply wiring.
- Maintain reliable grounding of the equipment. Give particular attention to supply connections when connecting to power strips, rather than direct connections to the branch circuit.
- Use a quality surge/spike suppresser power strip to protect the unit.

5.2.2. Power Supply

The XD10 power supply automatically switches itself to accommodate AC input of between 110 VAC and 220 VAC.

The cooling fan in the power supply must be rotating when power is applied.

☑ To prevent dirt from being pulled into the DVD drives, do not block the ventilation holes at the side of the XD10 player**.**

5.2.3. DTS Timecode Reader Head Installation

The DTS Timecode Reader Head is designed to be mounted onto most projectors with a single mounting bracket.

1. Position the appropriate DTS mounting bracket on the same bolt pattern as the reel arm and bolt securely in place. (See Appendix E for reference.)
2. If both 35mm and 70mm reader heads are to be used on the same bracket, add spacer breakaway plates to the readers. (See Appendix E for reference.)
3. Install the DTS Timecode Reader Head onto the DTS mounting bracket and bolt into place with supplied hardware.
4. Re-install the reel arm on the top bolt pattern of the DTS mounting bracket.
5. Align the DTS mounting bracket and the reel arm. Align the film along the path from the reel arm, through the mounted DTS Timecode Reader Head, to the projector.

   ☑ **Important**: The DTS timecode reader MUST have a straight film path (no angles or twists) and at least a small amount of tension. Use the auxiliary flanged roller on the DTS Timecode Reader Head to avoid film "walk out" and to stabilize the film. (See the section on *Installing or Changing Auxiliary Timecode Reader Head Roller* in Appendix I: *Technical Maintenance*, for reference.) Additional guide rollers may be added to ensure proper film tension. This is most critical on platter systems.
6. Connect the 9-pin timecode cable to the reader and route to the sound rack. Connect the other end to the XD10 player rear panel "Timecode" connector.

5.2.3.1. Two Projector (Change-over) Theaters

Use a DTS timecode "Y" cable that will connect two readers to one XD10. Be sure to place each reader at the same location on each projector. This is to ensure the soundtrack plays in sync. The timecode offset values (distance from DTS reader to the projector's picture gate) must be the same for each projector.

5.3. Connection to Cinema Processors

The following instructions are generic procedures intended to supplement the processor installation instructions for your specific manufacturer's system. Cinema processor interface wiring diagrams are located in Appendix B of this manual. They show connections and sub-connections.

☑ Refer to the Installation Checklist at the front of this manual.

5.3.1. Dolby® CP45, CP55, CP65, CP500, CP650, UltraStereo JS Series, Panastereo and SMART Operation

The XD10 will automatically send one pulse to the cinema processor, changing the format to DTS. Whenever the XD10 drops out, a pulse will be sent to switch the cinema processor back to an analog (usually SR) format.

Set the automation/cues on film so they will not override the format change once the DTS has started to play, which can result in switching to an incorrect format. Be aware that after a film break, you may have to manually select the digital format (on the cinema processor) for DTS playback if the XD10 indicates it is playing in digital (the blue light is illuminated).

- **CP500**: Must have the Cat. 685 (analog input card) installed. DTS is accessed through Format 11.

- **SMART**: **Mod VI and VII** uses the DTS interface cable E709.
  For other SMART cinema processors, contact SMART directly at (800) 45-SMART or +1.770.449.6698.

5.3.2. Dolby® DA20 SR-D® System

The XD10 can be connected to the Dolby® SR-D® system without affecting performance of the Dolby® system.

The DA20 connects to the appropriate XD10 breakout board. When the XD10 is off, the DA20 output is routed through the breakout board. When the XD10 system is on and playing in digital, the DA20 connection (to the cinema processor) is switched out on the breakout card and the DTS digital soundtrack is given to the cinema processor.

In most instances, the SR-D® system should be powered down when playing in DTS.

5.3.3. Sony SDDS®

The XD10 system cannot connect to the DFP-D2000 and DFP-D2500. It can connect to the DFP-D3000 and DCP1000. See the interface and cable and interface drawings in Appendixes B and D.

5.3.4. Panastereo CSP1200 and SMART

There is an Automation Preset for Panastereo CSP1200 and SMART CP. For information, see the section on *Predefined Formats* in Chapter 7 in this guide.

5.3.5. Dolby® CP200 Operation

When the XD10 switches to digital, the normal signal paths are interrupted, and DTS signals are inserted just prior to the Dolby® EQ cards, in effect taking over the cinema processor.

☑ **CP200**: Program the automation optical default format to either "04" A-TYPE or "05" SR, whichever the film requires.

When the XD10 switches out of digital, the cinema processor is released and reverts to the format previously selected.

Unless modified, these cinema processors do not have a subwoofer input. In this case, DTS inserts the subwoofer signal post-fader; the fader or mute will not affect the subwoofer level.

☑ Check diagrams for sub connection.

5.3.6. XD10P Operation

XD10 units with the digital option should connect to the digital input on the XD10P using a double shielded digital out cable. In this configuration, XD10 Ext2 is the format used for the XD10. (See the diagram for DTS XD10 P Digital on page B-3 of Appendix B, *Cinema Processor Interface Wiring Diagrams*.)

XD10 units without the digital option should connect to the analog input on the XD10P using the standard 25-pin cable. In this configuration, XD10P Ext1 is the format used for the XD10. (See the diagram for DTS XD10 P Analog on page B-2 of Appendix B, *Cinema Processor Interface Wiring Diagrams*.)

5.4. XD10 Calibration and Setup

This section describes procedures for XD10 audio level adjustment, timecode reader sync adjustment, sound performance verification, and fail-safe operation verification.

5.4.1. Equipment Requirements

Complete checkout and adjustment of the XD10 requires (as a minimum) a multimeter, a SPL meter, and the DTS Demo film (which is part of the DTS Technician's Kit).

☑ The "B-Chain" calibration must be completed prior to adjustment of the XD10.

5.4.2. Setting and Adjusting Audio Output Levels

Channel setup tests and tones are pre-recorded onto the XD10 hard drive.

The audio playback level of the XD10's built-in 1 kHz test tone has been fixed at 300mV RMS. This level should match the audio buss level on the cinema processor that the XD10 is connected to. Verify the buss level by consulting the manufacturer of your cinema processor.

The pink noise tests that are built into the XD10 are used *only* to make A-B comparisons to an alternate sound source, such as magnetic sound track or analog sound.

☑ Be aware that some external pink noise generator cards used on some cinema processors—such as CP65 and CP55, which do not have internal pink noise generators—may have a level discrepancy of as much as 1.5 dB. For this reason the 1 kHz test tone is used for setting the XD10 audio output levels.

5.4.2.1. Adjusting Levels

The XD10 contains several built-in audio tests described in Section 7.2.2. They can be accessed through the following menu path: Setup → Audio → Audio Tests. Level adjustment audio tests for SPL calibration are described in Section 7.2.1, which can be accessed through the following menu path: Setup → Audio → Level Adjustment.

The Level Adjustment menu provides two choices:

Reference Tone: This will play 1K tone @ 300mV RMS on all channels. The level can be adjusted between +6.4 to -6.2 dB using the up and down arrow buttons.

Pink Noise: The input buss level for most cinema processors is 300mV input, so in most cases it will be unnecessary to make any adjustments to the XD10 output level. When the level is set at +0.00 dB, the XD10 output is at 300mV.

However, if necessary, each channel can be selected and adjusted individually using the arrow navigation buttons. The up and down arrows buttons will adjust the levels from +6.4 to -6.2 dB. The left and right arrow buttons will move back and forth among the channels.

When Pink Noise is selected, it will automatically start to play on the first channel (Left). This will be indicated on the status display screen. The blue DTS playback LED will also illuminate, indicating that Pink Noise is playing.

To adjust SPL settings, do the following:

1. Confirm that all amplifiers are on, mute is off, and masking and curtains are opened.
2. Before setting levels, confirm that SPL settings are completed on the cinema processor according to their recommendations. When setting levels, the cinema processor should be set to calibration level. In most cases, this is with the fader set to “7”.
3. With a good SPL meter, set the SPL levels according to the chart below. Note that SPL readings should be measured un-weighted, or C-weighted, with the meter set to slow, and the proper level setting of the subwoofer should be calibrated with an RTA.

Channel	Description	SPL
1	Left	85 dB
2	Right	85 dB
3	Center	85 dB
4	Sub bass	91 dB
5	Left Surround	82 dB
6	Right Surround	82 dB
7	Left Center	85 dB
8	Right Center	85 dB

☑ Any change made in either Reference Tone or Pink Noise will affect the other. For example, if you change the level of Reference Tone to +1.0 on Ch1, when you select Ch1 in the Pink Noise test section, it, will also be at +1.0.

5.4.3. A Note about DTS Subwoofer Output

The XD10 subwoofer output level ranges from 20 Hz to 80 Hz and 20 Hz to 120 Hz (Coherent Acoustics format), up to 27 dB above reference (85 dB).

⚠ Check your subwoofer's specifications to avoid damage to the speaker.

If a subwoofer is driven below its cutoff frequency, its driver(s) may become unloaded. When unloaded, the voice coil can travel outside of the magnet's gap, overheating and/or causing mechanical damage to the speaker. A high pass filter should be installed on speakers with high cutoff frequencies. Contact your speaker manufacturer for more information.

5.4.3.1. Subwoofer Signal in the Surround Channels

The subwoofer signal is derived by filtering the surround signals from 80 Hz and below, and then putting this signal onto its own "subwoofer" output on the XD10.

You can verify this while performing a B-chain alignment of a theater as follows:

1. Play the internal pink noise generator Subwoofer test. (Refer to Section 7.2.2, *Audio Tests*, in Chapter 7, *System Setup Menus*, in this guide.)
2. Turn off the subwoofer speaker and look at the pattern on the RTA.

   You'll see a dramatic roll-off at 80 Hz. It is normal to see DTS subwoofer pink noise, above 80 Hz, in the surround speakers and amps.

5.5. Timecode Reader Sync Adjustment

This adjustment is easily performed using the numbered leader in front of the DTS Demo Reel. (The demo reel is supplied with the *DTS Technician's Kit*, which can be purchased from any DTS dealer.) See the steps (below on this page).

If you do not have a demo reel, the delay can be calculated by counting the number of picture frames from the DTS reader head red LED (lens) to the projector's picture ("film") aperture. Multiply the result by 1.25 and subtract 1. Round the resulting number to the closest ¼ (0.25). Set the OFFSET value in the XD10 timecode menu ("TC Reader Offset") to this number.

Example**:** 27 frames x 1**.**25 = 33**.**75

33.75 - 1 = 32**.**75

Set the OFFSET to 32.75

☑ **Remember**: When using the counting frames method, frames are counted from the timecode reader lens to the picture aperture.

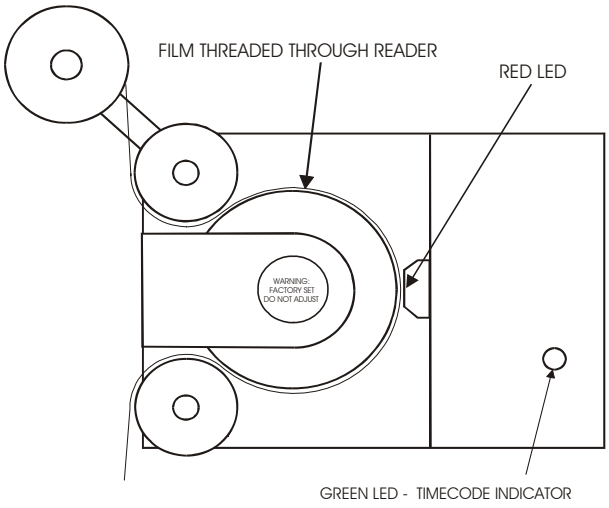


Figure 3. DTS Timecode Reader Head, Threading

5.5.1. Procedure Using Demo Reel

The Demo Reel has a specially printed leader for setting the timecode head offset.

1. Using the numbered leader, put the start mark **00** at the reader's lens (red LED) and thread the film through the projector as normal.
2. After threading, look at the film and read the number at the projector's sound head. This is the OFFSET value and that number should be entered into the XD10 timecode offset menu ("TC Reader Offset").

⚠ **Important**: Make the same size film loops inside the projector when measuring offset as when running a movie. Failure to do so will result in improper sync when the movie runs in DTS Digital mode. **For two-projector houses**, the reader at each projector must have the same OFFSET value.

5.5.2. DTS Special Venue Timecode Offset

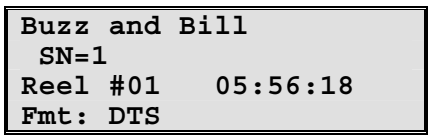
Information on the delay setting for special venues is available in Appendix K: Tech Notes. There are two pages of information:

1. DTS Special Venue Timecode Offset
2. Timecode Printing Offset for 35MM and 70MM Film.

5.5.3. Verifying Operation

5.5.3.1. Verify Sound Performance

1. Thread the DTS Demo reel (*Buzz and Bill*) through the projector and DTS reader. Be sure the XD10 is fully booted and ready to play. The soundtrack for *Buzz and Bill* is factory-loaded on the hard drive.
2. Start the projector. When the DTS Playback LED lights, verify that the XD10 automatically switches the cinema processor to the (DTS) Digital format. Verify that sound is heard in the monitor speaker. Open the porthole (if possible) and verify that sound is heard in the auditorium.
3. While still in the booth, verify that the XD10 front panel display shows the film title, serial number, reel number and running timecode. (Information in the display's fourth line is configurable by the user. For more information on selecting the type of information to display in Line 4, see Chapter 1, *Operating the XD10 Cinema Media Player*, in this manual.)



   - Line 1: Film title
   - Line 2: Film serial number
   - Line 3: Reel number and running time
   - Line 4: Can be selected by user. This example displays the format, which is DTS.
   -

4. Go into the theater while the Demo reel is playing. Verify sound is in-sync, sounds well balanced and has overall good digital sound quality.

   If levels sound unbalanced, check the cinema processor's output levels. Then be sure that the XD10 output of 300mV RMS on all channels matches the buss level of your cinema processor.

   ☑ The XD10 MUST match the cinema processor's buss level. (The buss level of your cinema processor should be indicated in its manual or consult the manufacturer.)

5. If the theater has two projectors, repeat this procedure for Projector 2.

5.5.3.2. Check Automatic Fail-Safe (Default) Operation

This procedure will verify that, should the DTS timecode reader fail for any reason, the system will automatically switch to optical sound format.

1. While the demo film is running, block the timecode at the reader or unplug the 9-pin connector at the reader.

   To block the timecode reader, insert a business card between the film and the lens of the DTS Timecode Reader Head and keep it there for at least six seconds.

2. Verify that after 4 to 5 seconds of not seeing timecode, the DTS XD10 switches to the SR optical sound format.

   There should not be a dramatic sound level difference when the cinema processor switches from digital to analog during **dialog scenes**. If there is a dramatic difference, check the cinema processor's levels first, then check the XD10 levels, and test again.

   ☑ Remember, the XD10 output level must match the cinema processor's buss level.

3. Now, restore timecode and XD10 should automatically switch the cinema processor to the DTS digital format after about two seconds.

4. If a two-projector theater, repeat this procedure for Projector 2.

6. Installing Licenses and Upgrading Software

6.1. Options

These options are enabled via specific licensing from DTS:

- High Definition Video
- CSS
- CineCast License

The following text describes these options.

- DTS HD Video Option: A card is added, which provides high definition digital video playback.
- DTS-CSS Option: provides subtitling and access options that include:
- Projecting subtitles or captions directly onto the screen via a video projector.
- Controlling WGBH Rear Window® Captioning, via serial connection to a light-emitting diode (LED) text display are mounted in rear of theater. Patrons use transparent acrylic panels attached to their seats to reflect the captions so they appear superimposed on or beneath the movie screen.
- Output of descriptive audio narration for patrons who are visually impaired (via infrared or RF transmitter and headsets).

☑ Auxiliary equipment (data wall, reflective panels, transmitter and headphones) are not available from DTS.

- CineCast license allows customers with the DTS Cinema Media Network™ to receive video content from a remote network server.

6.2. Options Setup and Testing

For instructions to install and configure the High Definition Video and CSS options, see the appropriate reference:

- HD Video Option – (See 7.3, *Video Setups*, in Chapter 7, *System Setup Menus*)
- Cinema Subtitling System (CSS) Option – (See Appendix J, *Installing CSS*.)

6.3. Installation of License Discs

1. Check that the XD10 serial number on the license disc matches the serial number on the back of the XD10. The option contained on the disc (CSS, Video and CineCast) is indicated by the disc label.

   ☑ For the CSS application, the auxiliary equipment (data wall, reflective panels, transmitter and headphones) are not available from DTS.

   ☑ Licenses are unit-specific and cannot be used on multiple XD10s.

2. Turn on the XD10.

3. Insert the license disc into one of the DVD drives.

   The XD10 will automatically extract the license from the disc. When a license disc has been successfully installed, the list of currently installed (option) licenses will be displayed, as shown below. Use the up and down arrow buttons to scroll through the list. Press **Enter** to continue.

   ```
   Installed Licenses:
   [*] Soundtrack
   [*] CSS
   [*] Video
   [*] Cinecast Server
   [Enter]-Continue
   ```

   ☑ You can also view the licenses currently installed on your unit at any time by going to **Enter** → **Info** → **Licenses**

   The following message appears if the license did not install:

   ```
   License file
   was not found

   [Enter]-Continue
   ```

   This message indicates that the license disc did not contain the license created for that specific XD10.

   ⚠ If an error message appears, check the following.

   Does the serial number on the license disc match the serial number on the XD10?
   If it matches but still does not load, check that the MAC address listed on the disc matches that on the XD10 (Press **Enter** and select **Info** → **MAC address**). For additional assistance, contact DTS Technical Service.

4. Press **Enter** to eject the license disc.

6.3.1. XD10 Software Updates

XD10 software updates may be distributed with a DTS feature or trailer soundtrack disc. The update will occur automatically when the soundtrack disc is installed in the XD10. The update will not affect any of the XD10 configuration or contents and there is no special action required after the install takes place. The only noticeable affect will be the extra time required after loading the soundtrack or trailer disc.

When the soundtrack disc with the XD10 update is inserted in the XD10 the soundtrack files are first copied on the XD10. The following message appears when the file copy has completed:

Press **Enter** and the following messages appears:

```
Ejecting CD-ROM
```

```
XD10 update
May take 5 minutes
```

```
DTS-XD10

Update to 2.XX.XX
Please Wait...(100%)
```

At this point the XD10 software resets:

```
DTS-XD10

System Restarting
Please Wait...
```

The software update is complete when the “Ready” appears on the display.

```
Ready
```

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7. Setup Menus

The Setup menu contains all configurable settings for the XD10 that should be set by the technician and are not expected to change during day-to-day operations. The setup menu can be password protected to assure that the configuration does not change after the technician leaves.

Select **Setup** from the Main menu to enter the setup menu, as shown below.

```
MAIN MENU
• Playback
► Setup
• Info
• Exit Menus
```

If the XD10 is password protected, the menu shown below will appear. The default mode for the XD10 is with the password disabled. If the password is disabled, this menu will not appear.

```
Password:

     [ 0 0 0 ]
       *
```

The cursor is the '*' underneath one of the three digits.

Commands:

►	Moves cursor to the right.
◄	Moves cursor to the left, or returns to the Main Menu if at the first position.
▲	Increments digit at cursor position. Wraps from 9 to 0.
▼	Decrements digit at cursor position. Wraps from 0 to 9.
Enter	Press to enter the password.

If the correct password is entered and **Enter** is pressed, the System Setup menu will appear. If an incorrect password is entered, the following message will appear.

```
Password:

     [ 0 0 0 ]
Error: Try again
```

Press **Enter** to reenter the correct password. If you forget the password, contact DTS Technical Service and a Technical Service Representative will help you to regain access to the XD10.

The following menu displays once the System Setup password is entered:

```
SYSTEM SETUP MENU
• TC Reader Offset
• Audio
• Video
• CSS
• Automation
• System
• Display Language
• Exit Menus
```

Main Menu → Setup

System Setup Sub Menu Overview:

TC Reader Offset	Enters menu to set the timecode reader offset. This must be set for playing Soundtrack and CSS content to properly synchronize the content to the film.
Audio	Sets test audio levels, plays audio test files and enables/disables language selection. The *Language Versions* should be enabled in areas where different languages should be played. The audio levels and test files are used to set audio for either soundtrack or video with audio.
Video	Enters menu to set the parameters for the Video projector. This menu is available only with the HD Video Option.
CSS	Enters menu to set the parameters for the projected CSS subtitles or captions. There are no configurable items for narration and Rear Window™ in this menu. This menu is available only with a valid CSS license.
Automation	Contains the following configuration items: 1) Format automation pin definitions and operating modes, 2) Define functions for general purpose input and output control pins, 3) Configure Video Playlist Automation parameters, 4) Define automated language setups for soundtrack and/or CSS subtitles. This menu also contains a menu to test format automation signals and I/O control signals.
System	Contains menus for the following system operations: 1) USB memory device operations to save or restore configurations, or save log files, 2) Configure COM1 for use by the Video Projector or CSS Rear Window™, 3) Set the setup menu password, 4) Set system network parameters, 5) Set XD10 time and date, 6) Revert to an earlier XD10 software version.
Display Language	Enters menu to change the language used on the XD10 LCD to one of the following: English, French, German, Italian, or Spanish.

7.1. TC (timecode) Reader Offset

This menu allows you to enter the offset required for your particular timecode reader location. See Chapter 5, Section 5.5, *Timecode Reader Sync Adjustment*, for information on calculating the correct settings. Adjustments can be made while playing and will occur within two seconds.

To access this menu, select **TC Reader Offset** from the System Setup Menu, as shown below.

```
TC Reader Offset
• 35mm
• 70mm
• SMPTE
• Exit Menus
```

Main menu → Setup → TC Reader Offset

Timecode Reader Offset Menu Overview:

35mm	Set TC reader offset for 35mm reader head.
70mm	Set TC reader offset for 70mm reader head.
SMPTE	Set Serial number, reel number and offset for playback to SMPTE timecode.

7.1.1. 35mm or 70mm Timecode Reader Offset

This menu sets the timecode reader offset for 35mm or 70mm timecode reader heads. The operator may select between either 35mm or 70mm reader heads through a menu in the Playback →Film section.

```
Set Timecode Reader
Offset  (35mm):

   [ 30.00] Frames
```

Main menu → Setup → TC Reader Offset → 35mm

Note the operation for setting the 70mm timecode reader head offset is equivalent.

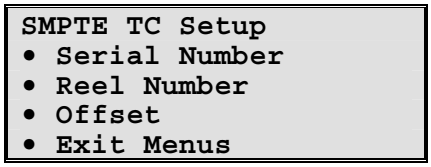
Commands:

▲	Press one time to increase offset by 0.25 frames. Press and hold down to repeat. Maximum possible number of frames is 100.
▼	Press one time to increase offset by 0.25 frames. Press and hold down to repeat. Do not set below 10 frames.
Enter	Return to Setup Menu.

☑ Note: If not using 70mm, set the 70mm offset to match the 35mm. This will prevent problems if the user selects 70mm by mistake.

7.1.2. SMPTE

☑ For more information on XD10 operation with SMPTE timecode, please refer to TN-H171.



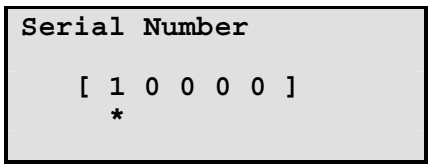
Main menu → Setup → TC Reader Offset → SMPTE

SMPTE Menu Overview:

Serial Number	Assigns a serial number to the incoming SMPTE timecode.
Reel Number	Assigns a reel number to the incoming SMPTE timecode.
Offset	Apply a fixed offset to the incoming SMPTE timecode.

7.1.2.1. SMPTE: Serial Number

This menu assigns a DTS serial number to the incoming SMPTE timecode. If the value is set to zero, then the serial number value comes from the user bits on the SMPTE timecode. The DTS serial number is used to determine which film soundtrack will be used for playback.



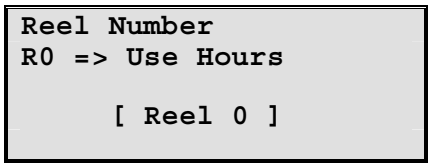
Main menu → Setup → TC Reader Offset → SMPTE → Serial Number

Commands:

Right	Move asterisk (cursor) one position to the right.
Left	Move asterisk (cursor) one position to the left, or return to previous menu if at the left most position.
Up	Increment serial number by 1 value of number at asterisk position .
Down	Decrease serial number by 1 value of number at asterisk position .
Enter	Return to previous screen.

7.1.2.2. SMPTE: Reel Number

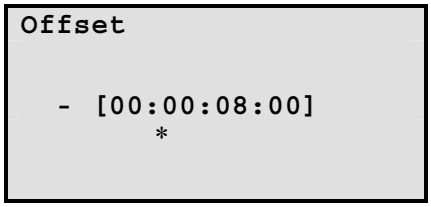
This menu assigns a DTS reel number to the incoming SMPTE timecode. If the value is set to zero, then the hours value from the incoming SMPTE timecode will be used for the reel number. The reel number must be set to 1 in order to play long audio files (greater than one hour in length).



Main menu → Setup → TC Reader Offset → SMPTE → Reel Number

7.1.2.3. SMPTE: Offset

This menu sets an offset to the incoming SMPTE timecode. It does not have any affect when playing DTS timecode. The offset can be set to plus or minus value.



Main menu → Setup → TC Reader Offset → SMPTE → Offset

The fields set are [plus/minus] [Hours]:[Minutes]:[Seconds]:[Frames]. The asterisk on the bottom line is positioned below the field that will be modified.

Commands:

Right Move asterisk (cursor) one position to the right.

Left Move asterisk (cursor) one position to the left, or return to previous menu if at the left most position.

Up Increment serial number by 1 value of number at asterisk position .

Down Decrease serial number by 1 value of number at asterisk position .

Enter Return to the previous menu.

7.2. Audio Setup Menu

This menu allows you to set up and test the XD10 audio. It also allows you to enable or disable the Language Versions function.

```
AUDIO SETUP MENU
► Level Adjustment
• Audio Tests
• Language Versions
• Exit Menus
```

Main menu → Setup → Audio

Commands

Level Adjustment	Adjust sound levels using audio generated by the XD10.
Audio Tests	Play preloaded audio tests.
Language Versions	Enable or Disable the language versions function.

7.2.1. Level Adjustment

This menu is the first in a series of menus for setting the XD10 audio output level.

```
Select Audio
• Reference Tone
• Pink Noise
```

Main menu → Setup → Audio → Level Adjustment

Commands

Reference Tone	Play 1 kHz reference tone on all channels for adjusting the level.
Pink Noise	Play pink noise on the current channel for adjusting the level.

Select either Reference Tone or Pink Noise to use the level adjustment menu. Reference tone is a 1 kHz test tone that has been preset at 300mV RMS when the output is set to 0.0 dB. This is what most cinema processors suggest for input. Alternatively, Pink Noise may be used to verify level outputs on the XD10. It is played only on the channel chosen for adjustment. The level adjustments are made the same, regardless of whether you are using the reference tone or pink noise selection. The pink noise for the Sub bass channel is not bandwidth limited.

For example, if you select Reference Tone for the left channel (ch1), the following message will appear on the XD10 status display.

```
Adjust level for
Ch 1 (Left)
     [ +00.0dB]
Tone on all channels
```

Main menu → Setup → Audio → Reference Tone or Pink Noise

Commands:

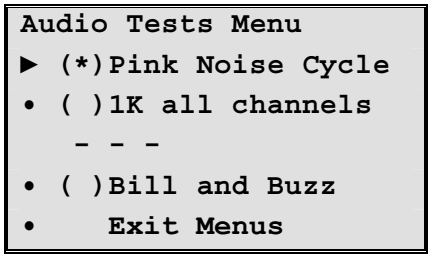
▲	Increase the volume for the current channel. Maximum is +6.4 dB.
▼	Decrease the volume for the current channel. Minimum is -6.2 dB.
► or **Enter**	Advance to the next channel (see Table 7 for channel sequence). If playing pink noise, it will follow the current channel. Press ► after reaching the last channel to return to the Select Audio menu.
◄	Return to the previous channel (See Table 7 for channel sequence). If playing pink noise, it will follow the current channel. After reaching the first channel, press ◄ to return to the Select Audio menu.

Table 7. Channel Sequence

Channel #	Channel Name
1	Left
2	Right
3	Center
4	Sub Bass
5	Left Surr
6	Right Surr
7	Left Center
8	Right Center
9	Back Surr
10	Aux

7.2.2. Audio Tests

This menu allows you to play preloaded audio test content. See Table 8 for a description of the tests. Note that the Buzz and Bill test will also play CSS content (captions, subtitles, and narration) if the XD10 is licensed for CSS.



Main menu → Setup → Audio → Audio Tests

Scroll up and down the menu to select a test. Position the cursor next to your selection and press the **Enter** button to start the test. Press ◄ to stop the test.

Table 8. Audio Tests

Name	Description
Pink Noise Cycle	Plays pink noise on one channel for approx 5 seconds, then moves to next channel
1K all channels	Plays continuous tone on all channels, so analog output can be calibrated for 300Mv RMS
Pink: Left	Plays continuous pink noise on left channel
Pink: Left Surr	Plays continuous pink noise on left surround channel
Pink: Center	Plays continuous pink noise on center channel
Pink: Right Surr	Plays continuous pink noise on right surround channel
Pink: Right	Plays continuous pink noise on right channel
Pink: Sub Bass	Plays continuous pink noise on sub bass channel
Digital Silence	Plays continuous digital silence on all channels
Left Ch Sweep	Plays continuous tone sweep from 25 Hz to 20 kHz on left channel
Left Surr Sweep	Plays continuous tone sweep from 125 Hz to 20 kHz on the left surround channel
Center Ch Sweep	Plays continuous tone sweep 25 Hz to 20 kHz on center channel
Right Surr Sweep	Plays continuous tone sweep from 125 Hz to 20 kHz on the right surround channel
Right Ch Sweep	Plays continuous tone sweep 25 Hz to 20 kHz on right channel
Sub Bass Sweep	Plays continuous tone sweep from 20 Hz to 80 Hz on the sub bass channel
ES CS Pink	Plays continuous pink noise on back surround channel
ES CS 1K	Plays continuous 1 kHz tone on back surround channel
Flying Disc	plays *Flying Disc* DTS trailer
Sonic Landscape	plays *Sonic Landscape* DTS trailer
Sparks	Plays *Sparks* DTS trailer
Bill and Buzz	Plays introduction track, but not movie clips, from DTS Demo reel *Buzz and Bill*. Contains soundtrack, narration, and captions/subtitles, which will play only with the CSS option.

Pink Noise Cycle

- Track description: 5.1 channel
- Level: -20 dBFS level
- Duration: 10 seconds each
- Channel Sequence: L, C, R, LS, RS, SW

Subwoofer Bandwidth

- "5.1" tracks: 20 Hz to 125 Hz
- "6.0" tracks (Special Venue): 20 Hz to 20 kHz (Full Range / F.R.)

7.2.3. Language Versions

This menu is used to either *enable* or *disable* the Language Versions function. Language Versions allows the XD10 to play different soundtrack languages for the same film. The XD10 may load several language versions of a feature or trailer soundtrack, and play the selected language. The playback language maybe entered by the projectionist or selected by automation.

```
LANGUAGE VERSIONS
• (*)Enabled
• ( )Disabled
•    Exit
```

Main menu → Setup → Audio → Language Versions

Options:

Enabled Enables Language Versions.

Disabled Disables language versions. If your theater only plays soundtracks in one language, it is a good idea to disable this option. The XD10 only keeps the last soundtrack language loaded into the XD10.

☑ When changing the Language Versions feature from disabled to enabled, you must delete all contents and reload in order for the XD10 to identify the languages you select.

7.3. Video Setup

The Video Setup menu is used to set the video configuration, audio parameters specifically for the video playlists, and video projector settings.

```
VIDEO SETUP
• Output
• Video Audio
• Projector
• Test Contents
• Exit Menus
```

Main Menu → Setup→ Video

Commands:

Output Select settings to create the optimal image for the installed digital video project or video monitor.

Video AudioChange the audio delay and the audio trim used when playing video content.

Projector Settings used to select a profile for the video projector serial control.

Test Contents Enter menu to play video test contents.

7.3.1. Video Output Settings

The Video Output menu's submenus are used to select settings for the optimal image for the installed digital video projector system or monitor.

```
VIDEO OUTPUT
• Interface
• Aspect
• Color
• Resolution
• Frame Rate
• Exit Menus
```

Main Menu → Setup → Video → Output

Commands:

Interface Select cable type being used with video projector or monitor.
Aspect Select appropriate aspect ratio for video projector or monitor.
Color Select appropriate color space for video projector.
Resolution Select optimal projector resolution.
Frame Rate Select appropriate frame rate for selected resolution.

7.3.1.1. Video Interface

The Video Interface menu is used to select the appropriate cable for the video projector or monitor being used.

```
Video Interface Type
•(*)DVI
•( )VGA
•   Exit Menus
```

Main menu → Setup → Video → Output → Interface

Options:

DVI	Select if the video projector or monitor is connected using a DVI cable.
VGA	Select if the video projector or monitor is connected using a VGA cable

.

7.3.1.2. Video Aspect

This menu is used to select the appropriate aspect ratio for the video projector or monitor.

```
Device Aspect Ratio
•(*)16x9
•( )4x3
•   Exit Menus
```

Main menu → Setup → Video → Output → Aspect

Options:

16x9	Select if the video projector or monitor has a 16 x 9 aspect ratio.
4x3	Select if the video projector or monitor has a 4 x 3 aspect ratio.

☑ Other aspect ratios are not supported.

7.3.1.3. Video Color Setting

This menu is used to select the appropriate color space for the installation.

```
Video Color
•(*) RGB 0-255
•( ) RGB 16-235
•( ) YUV-601
•( ) YUV-709
•   Exit Menus
```

Main menu → Setup → Video → Output → Color

7.3.1.4. Video Resolution

This menu is used to set the video output resolution. In most cases this should be set to the native resolution of the video projector. Changing the video output resolution requires that both a resolution and a frame rate be selected. For this reason, the frame rate menu will appear after the resolution is changed and the user exits this menu. The table on the following page lists all available resolutions and frame rates.

```
 Set Video Resolution
•(*)640x480
•( )800x600
•( )1024x768
•( )1280x720
•( )1280x768
•( )1280x1024
•( )1360x768
•( )1366x768
•( )1600x1200
•( )1920x1080
•( )1920x1200
Frame Rate
```

Main menu → Setup → Video → Output → Resolution

7.3.1.5. Video Frame Rate Menu

This menu is used to set the video frame rate. The options are displayed in frames per second with an "i" indicating interlaced, and "p" indicating a progressive frame rate.

The frame rates available depend on the selected resolution, and the video resolution must be set before setting the frame rate. The frame rate menu displays the current resolution on the menu title. The menu below shows the default frame rate menu for the resolution of 1920x1080. Table 9, on the following page, lists all frame rates available for each resolution.

```
1920x1080 Options
•(*)23p
•( )24p
•( )25p
•( )29p
•( )30p
•( )47i
•( )48i
•( )50i
•( )59i
•( )50p
• Frame Rate
•   Exit Menus
```

Main menu → Setup → Video → Output → Frame Rate

Table 9, below, lists all frame rates available for each resolution.

Table 9. Available Frame Rates for Each Resolution

Resolution	Available Frame Rates
640 x 480	60p
	72p
	75p
	85p
700x600	56p
	60p
	72p
	75p
	85p
1024x768	43i
	60p
	70p
	75p
	85p
1280x720	23p
	24p
	25p
	29p
	30p
	59p
	60p
1280x768	60p
	75p
	85p
1360768	60p
1366x768	50p
1366x768	59.94p
1366x768	60p
1600x1200	60p
1920x1080	23p
	24p
	25p
	29p
	30p
	47i
	48i
	50i
	59i
	60i
	50p
1920x1200	60p

7.3.2. Video Audio

These settings affect the audio only when playing video content.

```
Video Audio
• Audio Delay
• Audio Trim
•   Exit Menus
```

Main Menu → Setup → Video → Video Audio

Commands

Audio Delay	Delay the audio to adjust for any frame delay in the video projector.
Audio Trim	Attenuate the volume during playback of video content.

7.3.2.1. Video Audio Delay

This setting adds a delay to the audio in order to adjust for any frame delay in the video projector. It can be changed in 10ms increments. The default value for this setting is 0, The minimum value for this setting is 0 (no additional delay is applied) and the maximum value for this setting is 2000ms.

```
Video Audio Delay

     [   0] ms
```

Main Menu → Setup → Video → Video Audio → Audio Delay

7.3.2.2. Video Audio Trim

This setting will attenuate the volume during the playback for video content. It has no affect on the volume for soundtrack. It can be set to a value between 0db and -15db.

```
Video Audio Trim

     [   0] dB
```

Main Menu → Setup → Video → Video Audio → Audio Trim

☑ Note: Change takes affect only after rebooting the XD10.

7.3.3. Video Projector

This menu provides functions to setup the serial control for the video projector.

```
Video Projector
• Select Projector
• Lamp On/Off
• Save Settings
• Exit Menus
```

Main Menu → Setup → Video → Projector

Commands

Select Projector	Select a profile for the serial control of the video projector.
Lamp On/Off	**T**est the lamp on/lamp off serial control function.
Save Settings	Create a copy of the projector settings on the XD10. The settings are restored to the projector upon the start of any video playlist.

Note: In order for the XD10 to control the projector through the serial interface you also need to set the serial port for Video Projector (not Rear Window).
Main Menu→Setup→System→Com1→Configuration→Video Projector.

7.3.3.1. Select Projector

This menu selects the profile for the serial control of the video projector. By default **No Projector** is selected. If **no projector** is selected the XD10 can still play video through the projector, but won't be able to do some things automatically like turn the lamp on and off, or restore the saved projector settings.

By default, the projector profiles for the Sanyo PLV-70 and PLV-WF10 Projectors are included in the XD10 software. Additional projector profiles can be created and loaded onto the XD10 through the CD-ROM or USB memory. Contact DTS Customer Service.

```
Select Projector
•(*)No Projector
•( )plv-wf10
•( )plv70
# # #
```

Main Menu → Setup → Video → Projector → Select Projector

7.3.3.2. Lamp On/Off Control

This menu may be used to turn the video projector lamp on and off during testing or setup.

```
Video Lamp
•(*)On
•( )Off
•   Exit Menus
```

Main menu → Setup → Video → Projector → Lamp on/off

Commands:

On	Select On to turn the projector lamp on.
Off	Select Off to turn the projector lamp off.

☑ NOTE 1: The video projector may take one to two minutes to respond to the **Lamp On** command when the lamp is still warm from use.

☑ NOTE 2: Only available for projectors supported by XD10 serial control.

☑

7.3.3.3. Save Video Projector Settings

The Save Settings menu is used to save or delete projector settings.

```
Save projector
settings?
• (*) Yes
• ( ) No
•     Exit Menus
```

Main menu → Setup → Video → Projector → Save Settings

To save the settings, select "Yes" and press **Enter**. The following message will appear if the operation is successful.

```
Projector settings have
been saved
On XD10.
Press [Enter]
```

Main menu → Setup → Video → Projector → Save Settings → Yes

The following message will appear if "No" is selected or if the communication to the projector was unsuccessful:

```
Projector settings
have not been saved
on XD10
Press [Enter]
```

Main menu → Setup → Video → Projector → Save Settings → No

☑ Only available for projectors supported by XD10 serial control.

7.3.3.4. Video Test Contents

The Test Contents menu is used to play or stop video test contents.

Main menu → Setup → Video → Test Contents

Commands:

Stop	Stops the play of video test content. This command does NOT turn the lamp off---use lamp control to turn the lamp off when finished.
Still Image	Displays a test pattern. The video projector lamp should go on immediately after executing this command. The image remains until the stop command is used.
Motion Image	Plays a motion video clip with DTS audio. The video projector lamp should go on immediately after executing this command, The clip repeats until the stop command is used.

7.4. Cinema Subtitling System (CSS) Setup

This is the top level menu for all CSS projector setup menus and it is available only when the XD10 has the CSS option. These menus apply for installations using either the DTS cinema subtitling projector or other video projectors for CSS projected subtitles.

For instructions on installing CSS, see Appendix J, *Installing the CSS Option.*

```
CSS Projector Setup
• Image Size
• Vertical Offset
• Test Patterns
• Options
• Exit Menus
```

Main menu → Setup → CSS

Options:

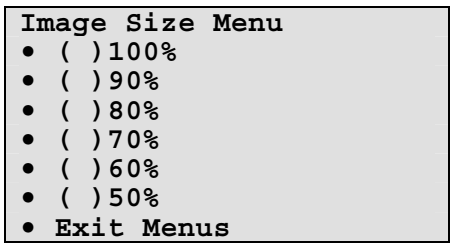
Image Size	Select size of subtitles
Vertical Offset	Adjust vertical placement of subtitles
Test Patterns	Display CSS test patterns.
Options	Set color options.

If your XD10 is not equipped with the CSS Option, you will be locked out of the CSS option on the Setup menu. When you try to access it, the following message will appear on the screen.

```
CSS playback
is not enabled.
License
required.
```

7.4.1. Image Size

This menu allows you to select the size of subtitles/captions from the available sizes supplied on the DTS subtitle or DTS Access™ disc. Check the disc label to see what sizes are available on the distributed subtitles/captions. If you select a smaller size, and it is not available, the system will assign the next smallest size available. (The CSS content delivered on the disc may not contain all sizes.)



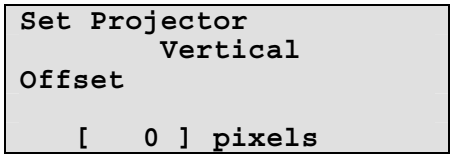
Main menu → Setup → CSS → Image Size

Options:

Image Size	From 50% to 100% of size available for text for subtitles/captions. (Sizes listed on the menu may not all be available in the CSS content delivered on the disc.)

7.4.2. Vertical Offset

This menu allows you to make fine adjustments to the vertical placement (in pixels) of CSS subtitles. When you enter this menu, the XD10 projects a subtitle area pattern to use to reference the position. When installing the projector, set the projector vertical offset to 0 and physically position the projector to project in the subtitle area. Then use this menu to make fine adjustments.



Main menu → Setup → CSS → Vertical Offset

Options:

▲	Move subtitle area up one pixel. Press and hold ▲ to increase continuously.
▼	Move subtitle area down one pixel. Press and hold ▼ to increase continuously.
Enter	Return to CSS Setup menu.

7.4.3. Test Patterns

This menu allows you to select from an array of test patterns used for optimizing subtitle/caption display. The EMA dowser opens when this menu is entered.

```
Test Pattern Menu
• ( )Black
• ( )Mask Area
• ( )View Area
• ( )White
• ( )Full Screen
•    Exit Menus
```

Main menu → Setup → CSS → Test Patterns

Options:

Black	All black, so minimum image level from projector can be checked.
Mask Area	Subtitle area is all white. Size and location depend on the vertical offset and image size.
View Area	Subtitle area is a grid pattern. Size and location depend on the vertical offset and image area.
White	Entire projected area (not just subtitle area) is all white.
Full Screen	Entire projected area (not just subtitle area) is a grid pattern.
◄	Close EMA dowser and return to the CSS Setup menu.

7.4.4. Options

This menu lets you select the background color of subtitles and front projected captions. It will also let you select between the two DTS supported CSS projectors

```
CSS Projector Option
• Select Projector
• Background Color
• Text Color
• Exit Menus
```

Main menu -→ Setup → CSS → Options

7.4.4.1. Select Projector

This menu lets you select between the two DTS supported CSS projectors.

```
CSS Projector
• (*)CSP
• ( )EP910
•    Exit Menus
```

Main menu → Setup →> CSS → Options → Select Projector

7.4.4.2. Background Color

This menu lets you select the background color of subtitles and projected captions.

```
Background Color
• (*)Normal
• ( )Black
•    Exit Menus
```

Main menu → Setup → CSS → Options → Background

Options:

Normal	This results in a blue background color that must be used with the DTS cinema subtitling projector. It is used to correctly position the video image.
Black	Color that must be used when using a non-DTS projector

☑ Normal must be selected when using a DTS CSP (InFocus) cinema subtitling projector. When using a color projector, black is normally selected.

7.4.4.3. CSS Text Color

This menu lets you select the color of the text in subtitles and projected captions.

```
CSS Text Color
• (*)White
• ( )Yellow
•    Exit Menus
```

Main menu → Setup → CSS → Options → Text

Options:

White	White text will be used in subtitles and captions.
Yellow	Yellow text will be used in subtitles and captions

7.5. Automation / Control

This is the top level menu in the menu structure for setting format automation and I/O Control functions.

```
AUTOMATION / CONTROL
► Format
• I/O Control
• Playlist
• Test
• Exit Menus
```

Main menu → Setup → Automation

Commands

Format	Menu to define format pins and operating modes.
I/O Control	Menu for defining functions for configuration automation inputs and outputs.
Playlist	Menu for defining automation parameters for video playlist playback.
Test	Test the functionality of automation pins 1-8, I/O control pins 1-3, and the signal from the CINEMA SUBTITLING PROJECTOR fan.

7.5.1. Format Automation

This menu is for defining format pins and operating modes.

```
FORMAT AUTOMATION
► Pin Definitions
• Fallback Format
• Operating Mode
• Exit Menus
```

Main Menu → Setup → Automation → Format

Commands

Pin Definitions	Enter pin definitions for eight user-assignable format pins. Select predefined pin formats or create custom formats to meet specific installation requirements.
Fallback Formats	Select a fallback format for soundtrack.
Operating Mode	Test the functionality of the eight assignable automation pins, three I/O pins, and the signal from the CINEMA SUBTITLING PROJECTOR fan.

7.5.2. Pin Definitions

The Format Pin Defs menu is used to select settings for eight user-assignable pins in the XD10 25-pin Automation connector.

```
FORMAT PIN DEFS
▶ Predefined Formats
• Custom
• Exit Menus
```

Main Menu → Setup → Automation → Format→ Pin Definitions

Commands

Predefined Formats	Select predefined formats for commonly-used cinema processors.
Custom	Customize the pin formats by changing the pre-assigned format of one or more pins.

7.5.2.1. Predefined Formats

The Automation Preset menu is used to automatically configure pins for cinema processors listed on the menu.

☑ These presets are based on standard factory settings. If different formats are used, see Section 7.5.2.2, *Custom Formats*.

```
Automation Preset
▶ (*)DTS-6D Emulation
• ( )DTS-6AD/ECP
• ( )XD10P Analog
• ( )XD10P Digital
• ( )CP-65
• ( )CP-200
• ( )CP-500
• ( )CP-650
• ( )CSP1200
• ( )Smart CP
• ( )Sony D3000
• ( )UltraStereo JS
•   Exit Menus
```

Main Menu → Setup → Automation → Format → Pin Definitions → Predefined Formats

7.5.2.2. Custom Formats

The Format Pins menu is used to view or change the setting for any of the eight user-assignable format pins.

```
Format Pins
► Pin 1: Mono
• Pin 2: A
• Pin 3: SR (1)
• Pin 4: Unused
• Pin 5: DTS Pulse
• Pin 6: Unused
• Pin 7: Nonsync (1)
• Pin 8: Unused
• Exit Menus
```

Main Menu → Setup → Automation → Format → Pin Definitions → Custom

Commands

▲ and ▼	Scroll to the desired pin number and position the cursor next to it.
Enter	Enter menu to change the definition of the selected pin, as shown below.

To change the pin assignment, move the cursor to the desired pin number and press **Enter.** A menu appears with all of the available input pin assignments, as shown below. The menu heading displays the pin number that is being changed. In the following example, Pin 1 is being changed.

```
Change Pin 1
► (*)Unused
• ( )None
• ( )Mono
• ( )A
• ( )SR (1)
• ( )SR (2)
• ( )SR-D
• ( )External
• ( )Nonsync (1)
• ( )Nonsync (2)
• ( )Aux
• ( )User 1
• ( )User 2
• ( )DTS Pulse
• ( )DTS Sustain
• ( )DTS-ES
•  Exit Menus
```

Custom Format Options: Listed in Table 10, shown below.

Table 10. Custom Format Options

Name	Description
Unused	The XD10 ignores any input pulse on a pin defined as "unused"
Mono	Switches CP to process mono signal from optical reader.
A	Switches CP to process Academy signal from optical reader.
SR (1)	Switches CP to process SR signal from optical reader.
SR (2)	Informative format definition – no special meaning for XD10
External	Informative format definition – no special meaning for XD10
Nonsync (1)	The nonsync signal is used as the fallback format when the DTS soundtrack is interrupted within two minutes of the last reel of the feature.
Nonsync (2)	Informative format definition – no special meaning for XD10
Aux	Informative format definition – no special meaning for XD10
User 1	Informative format definition – no special meaning for XD10
User 2	Informative format definition – no special meaning for XD10
DTS Pulse	Use this definition to switch the CP to the XD10 input.
DTS Sustain	Use only for CP that requires a sustained signal to switch to the XD10 input.
DTS ES	Use this definition to switch the CP to the XD10 input and process as extended surround (ES). This should not be used to replace the DTS pulse signal, but as an alternate format used when the XD10 detects that the soundtrack is encoded for extended surround. If the XD10 does not have a DTS ES pin defined, then the DTS Pulse pin is used for both ES and non-ES soundtracks. A DTS-ES unit is required to decode the ES signal.

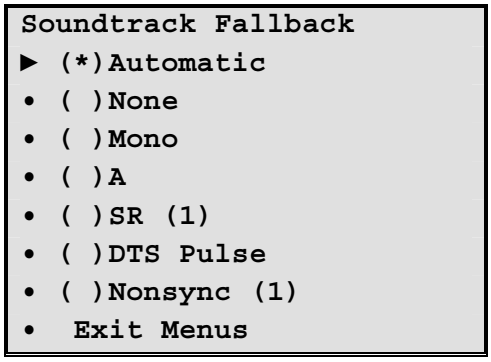
7.5.3. Fallback Format for Soundtrack

The Soundtrack Fallback menu is used to choose the "fallback" format selected by the XD10 when the DTS soundtrack stops playing.

When XD10 starts playing in DTS playback, it pulses the cinema processor to the DTS format. When the XD10 stops playing in DTS playback—either due to loss of timecode, missing audio file, or another unexpected error—it pulses the cinema processor to switch to an optical format. In many cases, it switches to the SR optical format on the film, but this menu can be used to set it to different fallback formats.

The pulse to the DTS format occurs at the time that the DTS Playback light becomes illuminated, provided that the conditions of the format automation mode are met (See Section 7.5.4). The pulse to the fallback format occurs at the time the DTS Playback light goes off, and is dependent on the conditions of the Soundtrack Fallback mode, shown below.

☑ The XD10 fallback format is always Nonsync (1) at the end of a feature film. The end of the film is defined as the last two minutes of the last reel of film for the feature.



Main Menu → Setup → Automation → Format → Fallback Format.

Options:

Automatic	The fallback format is selected by the header information in the DTS audio file that is playing. Possible definitions are SR, A, or MONO. These definitions are intended to reflect the optical format on the film. Almost all DTS audio files will have SR defined as the fallback format. The XD10 pulses the SR (1) pin for the SR signal – not SR (2).
None	There will be no format pulse when the DTS audio stops.
Others	The fallback format will be the pin selected. The options that appear in the Soundtrack Fallback menu, shown above, are only those formats that are used for a pin definition.

☑ If the fallback format is set to SR (1) and that pin is not defined as one of the format pins, then the XD10 will pulse the A format pin. If there is not an A format pin, then it will pulse the MONO format pin.

7.5.4. Automation Operating Mode

This menu allows the operating mode of the format switching to be set to one of three ways. The default setting is DTS-6D Emulation. The operating mode defines the conditions that need to be met for the XD10 to switch the CP to the DTS format. The operating mode applies only to format switching for film soundtrack playback. It does not affect format switching for the video playlists soundtrack.

```
Automation Mode
► ( )DTS-6D Emulation
• ( )Auto-Switch
• ( )Preselect Mode
     Exit Menus
```

Main Menu →Setup → Automation → Format → Operating Mode

Options:

DTS-6D Emulation	The XD10 emulates the 6D. (See Section 7.5.4.1 for a detailed explanation.)
Auto-Switch	The XD10 switches to DTS format only if it is in an optical format. (See Section 7.5.4.2 for a detailed explanation.)
Preselect Mode	The automation system must select the DTS format. (See 7.5.4.3 for a detailed explanation.)

7.5.4.1. DTS-6D Emulation

The XD10 pulses the CP to DTS format whenever it starts playing audio, regardless of the format previously selected from the automation system. When XD10 audio completes or is interrupted, the XD10 pulses the fallback format. This format switching operation is the same as that of the DTS-6/6D products.

The XD10 also pulses the fallback format when the audio stops and pulses the nonsync format when the end of the feature is reached.

In the DTS-6D Emulation mode, the XD10 will not react to format changes in the cinema processor. If a projectionist—or the automation system—changes the format, the XD10 ignores this. The XD10 will not react or attempt to pulse the format back to DTS. However, when this happens, the blue DTS Playback LED on the front panel will begin to blink. This is to alert the projectionist that DTS is playing, but the XD10 is not in DTS format.

7.5.4.2. AutoSwitch (Optical Formats)

The XD10 pulses the cinema processor to the DTS format when it starts playing audio, provided that the automation system has already selected either DTS or any of the optical formats—Mono, A, SR (1) or
SR (2). If any other format has been selected by the automation system, then the XD10 will not switch the cinema processor when audio starts.

If DTS format is selected by the automation system while the XD10 is NOT playing audio, then the XD10 pulses the cinema processor to the SR (1) format—or A or mono, if SR (1) is not available.

If any of the optical formats—Mono, A, SR (1), or SR (2)—are selected while the XD10 is playing audio, then the XD10 ignores the selection and immediately sends a DTS format pulse to the cinema processor.

When the audio completes or is interrupted, the XD10 pulses the cinema processor to the assigned fallback format or nonsync if the end of the feature is reached. If the automation system selects a different format while the audio is playing (other than DTS or any optical format), the XD10 will not output the fallback pulse when the audio stops. This assures that the XD10 will not override the user's automation choice.

7.5.4.3. Preselect Mode (SRD compatible)

This mode allows the automation system to have more control over format switching on the cinema processor. In this mode, the automation system must select the DTS format to activate XD10 automation.

The automation system should first pulse the DTS format before the XD10 audio starts playing. In response, the XD10 will immediately pulse the SR (1) format—or A or mono, if SR (1) is not available. The XD10 will pulse the DTS format upon playing the XD10 audio. The XD10 pulses the fallback format when the audio stops, or pulses the nonsync format if the end of the feature is reached. The fallback pulse will not occur if the automation system switched formats before the XD10 audio stopped.

7.6. I/O Control

The I/O CONTROL menu is used to configure the automated control input and output signals on the I/O connector. (This is NOT the same as cinema processor automation control.) It is also used to configure the automated soundtrack and subtitle language setups.

```
I/O CONTROL
► Pin Definitions
· Language Setups
· Exit Menus
```

Main Menu → Setup → Automation → I/O Control

Commands:

Pin Definitions	Enters menu to assign I/O pins to functions.
Language Setups	Enters menu to define the soundtrack and subtitle languages for any of the three language setups and the default languages.

7.6.1. I/O Pin Definitions

The I/O CONTROL menu is used to configure the automated control inputs and outputs signals on the I/O connector.

```
I/O PIN DEFINITIONS
► Inputs
· Outputs
· Exit Menus
```

Main Menu → Setup → Automation → I/O Control → Pin Definitions

Commands:

Inputs	Menu to assign functions to the input pins.
Outputs	Menu to assign functions to the output pins.

7.6.1.1. Input Control Pins

This menu is used to assign functions to input control pins. The assigned function is executed when a low level pulse is detected on the corresponding input pin. There are three separate input pins that can be assigned. When entering this menu, the current assignments are displayed next to the pin number, as shown below.

```
INPUT CONTROL PINS
► In 1: Unassigned
· In 2: Unassigned
· In 3: Unassigned
· Exit Menus
```

Main Menu → Setup → Automation → I/O Control → Pin Definitions → Inputs

To change the pin assignment, move the cursor to the desired pin number and press **Enter.** A menu appears with all of the available input pin assignments, as shown below:

```
Change In 1
► (*) Unassigned
· ( ) Start Preshow
· ( ) Stop Video
· ( ) Lang Setup
· ( ) S/PDIF On
· ( ) S/PDIF Off
· ( ) Intermission
· ( ) Playlist C
· ( ) Playlist D
· ( ) Playlist E
· ( ) Playlist F
· ( ) Playlist G
· ( ) Stop at End
· ( ) Video Lmp On
· ( ) Video Inh
· ( ) Slide Loop
  ( ) ACV
  ( ) 70mm TCR
·  Exit Menus
```

Options:

Unassigned	A pulse on this pin is ignored by the XD10.
Start Preshow	Starts the video Preshow.
Stop Video	Stops the video playlist.
Lang Setup	Activates a specified soundtrack language and subtitle language. Refer to Section 7.6.3.1 in order to select a desired language. This pin must be held low in order to activate the assigned language.

S/PDIF On	Enables the S/PDIF input to process DTS 5.1 audio or stereo PCM audio to the front left and front right speakers**.**
S/PDIF Off	Disables the S/PDIF input**.**
Intermission	Starts the intermission video playlist.
Playlist C	Starts Video Playlist C
Playlist D	Starts Video Playlist D
Playlist E	Starts Video Playlist E
Playlist F	Starts Video Playlist F
Playlist G	Starts Video Playlist G
Stop at End	Stops the video playlist after reaching the end of the current clip.
Video Lmp on	Turns on video projector lamp (if using serial control)
Video Inh	A low signal on this pin stops video playback immediately, and inhibits the video playlist from starting while the signal is low.
Slide Loop	Starts the video slide loop playlist.
ACV	Play alternate content show.
70mm TCR	Selects 70mm timecode reader offset setting whenever pin is low.

7.6.2. Output Control Pins

This menu is used to assign functions to output control pins. When entering this menu the current assignments are displayed next to the pin number, as shown below.

```
OUTPUT CONTROL PINS
► Out 1: Unassigned
· Out 2: Unassigned
· Out 3: Unassigned
· Exit Menus
```

Main Menu → Setup → Automation → I/O Control → Pin Definitions → Outputs

To change the pin assignment, move the cursor to the desired pin number and press **Enter.** A menu will appear with a list of all of the available output pin assignments, as shown below.

```
Change Out 1
► (*) Unassigned
· ( ) End Pulse
· ( ) DTS Output
· ( ) ES Output
· ( ) Start Pulse
· ( ) CSS Enabled
  ( ) Video On
· Exit Menus
```

Options:

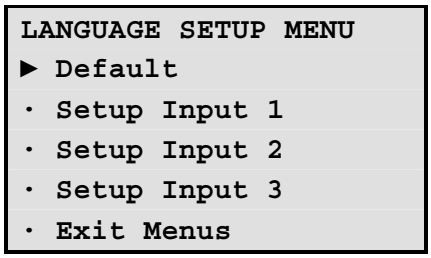
Unassigned	Unused by XD10.
End Pulse	Used for the end pulse during the video playlist automation sequence.
DTS Output	Output will be low whenever the XD10 is playing audio (or the Blue DTS Playback light is on).
ES Output	Output will be low whenever the XD10 is playing audio for extended surround (soundtrack audio only).
Start Pulse	Used for the start pulse during the video playlist automation sequence.
CSS Enabled	Output will be low when the CSS mode is either ON or ONE SHOW and a subtitle language is selected. If the subtitle language were set to Automation (*Language Setup*), then this signal would be disabled if the selected automation subtitle language is set to CSS OFF.
Video On	Output will be low when playing video.

7.6.3. Language Setups

The Language Setups menu allows you to automate the soundtrack and/or CSS subtitle language using one or more input control pin(s). The following describes the use of the language setups:

1. Language Versions must be enabled to automate soundtrack.
2. Assign input pin 1 as "Lang Setup". A low signal on this pin will then select the soundtrack and CSS subtitle language defined by "Setup Input 1". Alternately, input 2 and input 3 may be used for "Setup Input 2" and "Setup Input 3", respectively. A low signal on any of these pins selects the corresponding language setup definition. This allows for a total of 4 possible language combinations (Default, and Setup 1-3) based on the input control signal. Only one language setup pin should be held low at a time.
3. Define the soundtrack and/or CSS subtitle language for the "Default" setup. This selects the language that will be used when none of the language setup input pins are held low.
4. Define the soundtrack and/or CSS subtitle language for any of the input pins that are assigned "Lang Setup". "Lang Setup 1-3" will be used for Pins 1-3, respectively,
5. The selected soundtrack language or subtitle language plays only if the content for that language has been loaded on the XD10. Each feature soundtrack dub is normally a separate set of discs. Also, each CSS subtitle language for a feature may be on separate discs. Check the disc label for the contents language.
6. When playing soundtrack or audio, the status display may be used to monitor which soundtrack and or subtitle language is playing.

To set the language setup, first select the submenu for "Default" or "Setup Input 1-3"



Main → Setup → Automation Setup → I/O Control → Language Setups

Commands:

Default	Select the default soundtrack and CSS subtitle languages.
Setup Input 1	Select the soundtrack and CSS subtitle languages when Pin 1 (Lang Setup) is enabled.
Setup Input 2	Select the soundtrack and CSS subtitle languages when Pin 2 (Lang Setup) is enabled
Setup Input 3	Select the soundtrack and CSS subtitle languages when Pin 3 (Lang Setup) is enabled.

The menu shown below appears when one of the selections is made. The setup title describes which selection is being modified.

```
LANGUAGE [Setup Title]
► Soundtrack
· Subtitle
· Exit Menus
```

Main → Setup → Automation → I/O Control → Language Setups → Default

Options:

Soundtrack Menu to select the soundtrack language for the default or corresponding language setup pin.

Subtitle Menu to select soundtrack and CSS subtitle languages when Pin 1 (Lang Setup) is enabled.

7.6.3.1. Soundtrack Language Setups

When **Soundtrack** is selected from the language setup (Default of Language setup 1-3), the list of 56 available languages, appears on the screen. Select the soundtrack language that is desired for the language setup.

```
<Soundtrack Default>
► ( ) Arabic
· ( ) Aramaic
· ( ) Basque
· ( ) Braz. Portuguese
----------------------
· ( ) Zulu
► Exit Menus
```

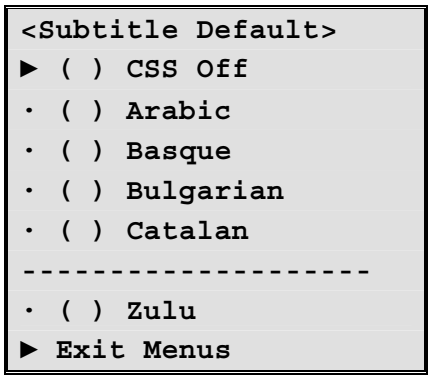
Main → Setup → Automation → I/O Control → Language Setups→ Default → Soundtrack

Soundtrack Language List

English	Basque	Bulgarian	Catalan	Croatian	Czech
Danish	Dutch	Finnish	Flemish	French	German
Greek	Hebrew	Hungarian	Icelandic	Italian	Norwegian
Polish	Portuguese	Russian	Serbian	Slovak	Slovenian
Swedish	Turkish	Hindi	Indonesian	Japanese	Kannada
Khmer	Malay	Malayalam	Tamil	Teluga	Thai
Urdu	Vietnamese	Arabic	Farsi	Masai	Zulu
Fr. Canadian	Mexican Spanish	Braz. Portuguese	Latin Spanish	Estonian	German (Austria)
Latvian	Lithuanian	Spanish (Castil)	Swiss German	Cantonese	Korean
Mandarin	Aramaic				

7.6.3.2. Subtitle Language Setups

When **Subtitle** is selected from the language setup (Default of Language setup 1-3), the list of 48 available languages appears on the screen. Select the subtitle language that is desired for the language setup.



Main → Setup → Automation → I/O Control → Language Setups→ Default → Subtitle

Subtitle Language List

Arabic	Basque	Bulgarian	Catalan	Chinese (Simpl)	Chinese (Trad)
Croatian	Czech	Danish	Dutch	English	English Captions
Finnish	Flemish	French	German	Greek	Hebrew
Hindi	Hungarian	Icelandic	Indonesian	Italian	Japanese
Kannada	Khmer	Korean-Vertical	Masai	Malay	Malayalam
Norwegian	Polish	Portuguese	Russian	Serbian	Slovak
Slovenian	Spanish	Swedish	Tamil	Teluga	Thai
Turkish	Urdu	Vietnamese	Zulu		

7.6.3.3. Assigned Subtitle Language

When a **Setup Input** pin number is selected from the Language Setup menu, this menu may be used to access a specific pin in order to assign a subtitle language to it.

```
LANGUAGE SETUP MENU
· (*) Default
► ( ) Setup Input 1
· ( ) Setup Input 2
· ( ) Setup Input 3
·     Exit Menus
```

Main → Setup → Automation → I/O Control → Language Setups → In Pin #

This menu is used to assign a subtitle language to a specific pin on the I/O connector.

```
Subtitle # 1
► ( ) Arabic
· ( ) Aramaic
· ( ) Basque
```

Main → Setup → Automation → I/O Control → Language Setups → In Pin # → Lang #

☑ The list of 48 languages available for subtitles appears in Section 7.6.3.2, on the previous page.

7.6.4. Playlist

The playlist setup is a series of menus used to set the delays and options for the video playlist. To access the Playlist menu, select **Playlist** from the Automation /Control menu, as shown below:

```
AUTOMATION / CONTROL
• Format
• I/O Control
▶ Playlist
• Test
• Exit Menus
```

Main menu → Setup → Automation

The Select Playlist menu, shown below, appears on the screen.

```
Select which
Playlist to
Configure:
<Playlist options>
```

Main menu → Setup → Automation → Playlist (Select Playlist)

Options:

Preshow	Select to edit the automation options for the Preshow playlist.
Intermission	Select to edit the automation options for the Intermission playlist.
Playlist C-G	Select to edit the automation options for Playlists C - G.

Use the **up** and **down arrow** buttons to display the desired playlist and then press **Enter** to edit the Playlist Automation option. Edit the option with the correct selection for that playlist. The following values may be set for each type of playlist:

- Video Start Delay (0 to 120 seconds)
- Start Pulse Enable
- Start Pulse Delay (0 to 120 seconds)
- End Pulse Enable
- End Pulse Delay (-60 to +60 seconds)
- Lamp off command at end of playlist
- End of playlist format
- Format for silent video clips
- Loop at end of playlist

7.6.4.1. Video Start Delay

The Video Start delay is the amount of time the XD10 waits after receiving the "start" command (to start playing videos from the playlist). This is used to allow the video projector lamp time to warm up.

```
<Playlist> Setup
Video Start
Delay:
[100] Seconds
```

Main menu → Setup → Automation → Playlist (Option 1)

Options:

0 to 120	Number of seconds the XD10 waits for the projector to warm up.

7.6.4.2. Output Start Pulse Enable

This menu defines whether the start pulse will be used for this playlist type. The start pulse must also be defined as one of the XD10 Control Output Pins. See Section 7.6.2, *Output Control Pins*.

```
<Playlist> Setup
Output Start
Pulse:
[Enable/Disable]
```

Main menu →> Setup → Automation → Playlist (Option 2)

Options:

Enable	Start pulse is enabled. Pulse timing is determined by the start pulse delay.
Disable	Start pulse is not used for this playlist.

7.6.4.3. Start Pulse Delay

This menu allows you to select the start pulse delay time to any time within the first 120 seconds after the start of the playlist.

```
<Playlist> Setup
Start Pulse
Delay:
[ 60] Seconds
```

Main menu → Setup → Automation → Playlist (Option 3)

Options:

0 - 120	Number of seconds delay after the playlist starts before the start pulse occurs.
Disable	Start pulse is not used for this playlist.

7.6.4.4. End Pulse Enable

This menu allows the end pulse to be enabled or disabled for the selected playlist type. The End Pulse must also be defined as one of the XD10 Control Output Pins. See Section 7.6.2, *Output Control Pins*.

```
<Playlist> Setup
Output End
pulse:
[Enable/Disable]
```

Main menu → Setup → Automation → Playlist (Option 4)

Options:

Enable	End pulse is enabled. Pulse timing is determined by the end pulse delay.
Disable	End pulse is not used for this playlist type.

7.6.4.5. End Pulse Delay

This menu allows the control of the end pulse timing anywhere within 60 seconds before to 60 seconds after the end of the playlist. A negative value is used to indicate that the pulse occurs before the end of the playlist.

```
<Playlist> Setup
End Pulse
Delay:
[ 60] Seconds
```

Main menu -→ Setup → Automation → Playlist (Option 5)

Options:

-60 to 60	Number of seconds offset between the end pulse and the end of the playlist.

7.6.4.6. Lamp off

This menu defines if the video projector lamp will be turned off when the playlist completes.

```
<Playlist> Setup
Turn lamp off at
end of playlist?
    [Yes/No]
```

Main menu → Setup → Automation → Playlist (Option 6)

Options:

Yes	The projector lamp remains on at the end of the playlist.
No	The projector lamp is turned off at the end of the playlist.

7.6.4.7. Silent Video Format

This menu selects what sound format will be selected during the playback of a silent video clip.

```
<Playlist> Setup
Select format for
silent video clips:
    [Format Options]
```

Main menu → Setup → Automation → Playlist (Option 7)

Options:

None	No sound format is pulsed for silent video clips.
[Format]	Any sound format that has been assigned to one of the eight automation format pins may be selected.

7.6.4.8. End of Playlist Format

This menu defines what sound format will be selected at the end of the playlist.

```
<Playlist> Setup
Select Format for
end of playlist:
   [Format Options]
```

Main menu → Setup → Automation → Playlist (Option 8)

Options:

None	No sound format will be pulsed at the end of the playlist.
[Format]	Any sound format that has been assigned to one of the eight automation format pins may be selected.

7.6.4.9. Playlist Looping Feature

This menu allows the playlist to be in a loop (play repeats over and over). The loop will continue until a playlist stop command occurs.

```
<Playlist> Setup
Loop at
end of playlist:
   [Yes/No]
```

Main menu → Setup → Automation → Playlist (Option 9)

Options:

Yes	When the end of the playlist is reached it will loop back to the first clip.
No	Looping not enabled.

7.6.5. Automation Test

This menu is used to confirm the assignments already made to automation pins 1-8, I/O Control pins 1-3, and pin 4, and the signal from the Cinema Subtitling Projector fan.

```
Automation Test
Fmt:-------- In:*---
[Pin 1: Mono       ]
[Enter] to Pulse
```

Main Menu → Setup → Automation → Test

Options:

▲ or ▼	Select between automation format pins 1-8 and (I/O) output 1-4 on line 3.
Enter	Pulse the format or I/O output pin as identified by line 3 of the display.

Line 2 of the display is a status indicator for the sound format and (I/O) input control pins. An active, or low, status, is indicated by the '*' character. Otherwise the '-' character is displayed. The status of automation (sound) format pins 1-8 are displayed in order following the text "FMT:' The first character after the text "IN:" is the EMA fan sense input, followed by (I/O) outputs 1 through 3 in numerical order.

7.7. System Settings

To access the System Options menu, select **System** from the System Setup Menu, as shown below.

```
SYSTEM OPTIONS MENU
► USB Memory
• COM1 Configuration
• Set Password
• Network
• System Clock
• Revert
• Exit Menus
```

Main Menu → Setup → System

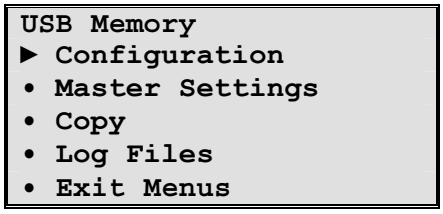
Options:

USB Memory	Store and load configuration or files to USB memory device.
COM1 Config	Select use for COM1.
Set Password	Set the password to enter the Setup menus.
Network	Set network parameters.
System Clock	View or change the XD10 time and date.
Revert	Revert to the previous software version.
Exit Menus	Return to the status display.

7.7.1. USB Memory

The USB memory menu allows you to save configuration settings from the XD10 hard drive onto a memory device inserted into the USB port.

The memory device (commonly called a "memory stick") can hold settings for several XD10 units. The number of units depends on the size of the memory device. The configuration file size of one XD10 unit is approximately 12K.



Main Menu → Setup → System → USB Memory

Options:

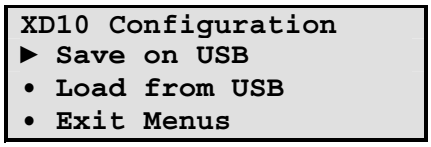
Configuration	Save or load XD10 configuration files and licenses.
Master Settings	Save or load XD10 master configuration settings.
Copy	Copy files to a USB memory device and restore them at a later time.
Log Files	Copy the XD10 log files to a USB memory device.

7.7.1.1. XD10 Configuration

This menu allows you to save the XD10 configuration and licenses on a USB memory device. A folder is created on the USB memory device when saving the configuration. The folder is given the name "XD10-xxxxxxxxxxx", where "xxxxxxxxxxx" is the MAC address specific to that XD10.

The configuration for several machines may be saved on the USB, each one in the folder named with its unique MAC address. When loading the Configuration through the USB, the XD10 will load only the configuration from the folder named with that XD10's MAC address.

☑ If you want to save settings from one XD10 and load them into a different XD10, see "Master Settings" after this section.



Main Menu → Setup → System → USB Memory → Configuration

Options:

Save on USB	Save XD10 configuration files on a USB memory device.
Load from USB	Load configuration files from a USB memory device to an XD10.

7.7.1.2. Save on USB

When you select **Save on USB** from the XD10 Configuration menu, the following confirmation message appears on the screen.

```
Confirm to save
XD10 settings
On USB memory
[Enter]-OK
```

Insert the USB memory device into the USB port on the XD10 and press **Enter** to start. If there is no USB memory device connected to the XD10, the following message appears and asks you to insert one.

```
Please insert USB
memory device…

[Enter]-Abort
```

After the settings are saved, the following message appears on the screen. You can remove the USB memory device.

```
Successfully saved
XD10 settings
On USB memory
[Enter]-Return
```

If the XD10 is unable to save the settings onto the USB memory device, the following error message appears on the screen. Check the USB for free space if this occurs.

```
USB Operation
Failed !!!

[Enter]-Return
```

7.7.1.3. Load from USB

When you select **Load from USB** from the XD10 Configuration menu, the following confirmation message appears on the screen.

```
Confirm to load
XD10 settings
from USB memory
[Enter]-OK
```

Insert the USB memory device that contains the settings for your XD10 into the USB port and press **Enter** to copy the settings onto the XD10's hard drive. If there is no USB memory device, the following message appears, asking you to insert one.

```
Please insert USB
memory device…

[Enter]-Abort
```

After the settings are loaded, the following message appears on the screen.

```
Successfully loaded
XD10 settings
from USB
[Enter]-Continue
```

When you press **Enter**, the following message appears on the screen. You must restart the XD10 before continuing to use it.

```
Please Restart
XD10 to use
new configuration
[Enter]-Return
```

If the XD10 is unable to load the configuration files to the USB memory device, the following error message appears on the screen. This will occur if you try to download settings from one XD10 to another unit. This function will only download settings saved from the same unit.

```
USB Operation
Failed !!!

[Enter]-Return
```

7.7.1.4. Master Settings

This menu allows you to save the XD10 configuration and transfer it to a different XD10. Saving the Master Settings creates a folder on the USB device name "XD10-Master". There can only be one Master configuration saved on the USB device. Any XD10 can load that Master setting. The license files cannot be transferred from one XD10 to another.

```
Master Settings
► Save on USB
• Load from USB
• Exit Menus
```

Main Menu → Setup → System → USB Memory → Master Setting

Options:

Save on USB	Save XD10 Master Settings from an XD10 onto a USB memory device.
Load from USB	Load Master Settings from one XD10 to another.

7.7.1.5. Save on USB

Select **Save on USB** from the Master Settings menu, and the following message appears.

```
Confirm to save
Master settings
On USB
[Enter]-OK
```

Insert the USB memory device into the XD10 and press **Enter** to start the process**.** If there is no USB memory device, the following message appears, asking you to insert one.

```
Please insert USB
memory device…

[Enter]-Abort
```

Insert the USB. The following message appears if the operation finishes without errors.

```
Successfully saved
Master settings
On USB
[Enter]-Return
```

If an error occurs, the following message appears.

```
USB Operation
Failed !!!

[Enter]-Return
```

7.7.1.6. Load from USB

Select **Load from USB** from the Master Settings menu, and the following message appears.

```
Confirm to load
Master settings
from USB memory
[Enter]-OK
```

Insert the USB memory device that contains the Master settings into the XD10 and press **Enter** to start the process**.** If there is no USB memory device, the following message appears, asking you to insert one.

```
Please insert USB
memory device…

[Enter]-Abort
```

After the Master settings are loaded onto the hard drive, the following message appears.

```
Successfully loaded
 Master settings
from USB
[Enter]-Continue
```

When you press **Enter**, the following message appears on the screen. Restart the XD10 before continuing to use it.

```
Please Restart
XD10 to use
new configuration
[Enter]-Return
```

If an error occurs, the following message appears. Check that the Master settings have been saved on the USB device.

```
USB Operation
Failed !!!

[Enter]-Return
```

7.7.1.7. Copy

Use this menu to load the configuration files from a USB memory device that may contain configuration files for several XD10 units. The configuration files on the USB memory device are those that have been stored by using the Configuration/Store function (Section 7.7.1.1).

Each XD10 configuration is identified by the MAC address. You must identify the XD10 unit to copy the configuration from by its MAC address.

This function may be used if an XD10 is being replaced, and the new unit requires the configuration of the one being replaced.

1. First you need to determine the MAC address of the XD10 being replaced, or copied. From the Ready message on the LCD status display, press **Enter** and select **Menu** –> **Info** –> **Mac Address** to view the MAC address. Write down the MAC address displayed.
2. Then select **Copy** from the USB Memory menu, as shown below.

```
USB Memory
• Configuration
• Master Settings
► Copy
• Log Files
• Exit Menus
```

Main Menu → Setup → System → USB Memory → Copy

3. If you have not inserted a USB memory device into the USB port, the following message will appear.

```
Please insert USB
memory device…

[Enter]-Abort
```

4. Insert the memory device into the USB port. A list of the MAC addresses on the memory device will display, as shown below.

```
List of XD10s
► 0001805be885
• 0001805be896
• 0001805be912
  # # #
```

5. Scroll through the list to find the MAC address that matches the address of your XD10. Position the cursor next to it.
6. Press **Enter** to copy (load) the settings associated with the correct MAC address onto the XD10.

7. The following message displays if the XD10 configuration successfully loads.

```
Successfully
Loaded settings from
 0001805be885
[Enter]-Continue
```

8. When you press **Enter**, the following message appears on the screen. Restart the XD10 before continuing to use it.

```
Please Restart
XD10 to use
new configuration
[Enter]-Return
```

☑ The following message displays if an error occurred.

```
USB Operation
Failed !!!

[Enter]-Return
```

7.7.1.8. Log Files

This menu allows you to copy XD10 log files onto a USB memory device. You may use this if the XD10 is having playback problems and a DTS representative asks you copy the log files and send them to DTS for analysis in order to determine the cause of the problem.

The log files are stored in a subdirectory on the USB device with the name \XD10-[MACaddress]\log, where [MACaddress] is the MAC address for the XD10.

Connect the USB memory device to the XD10. Then select **Log Files** from the USB Memory menu, as shown below.

```
USB Memory
• Configuration
• Master Settings
• Copy
► Log Files
• Exit Menus
```

Main Menu → Setup → System → USB Memory → Log Files

The following confirmation message will appear.

```
Confirm to copy
log files
onto USB
[Enter]-Return
```

Press **Enter** to activate the process of copying the Log Files from the XD10 to the USB memory device.

```
Successfully
copied XD10 log
Files to USB
[Enter] - Return
```

Then remove the USB memory device, copy the "log" files to a PC, zip them, and email them to the DTS representative.

7.7.1.9. COM1 Configuration

The COM1 Configuration menu, shown below, is used to assign a function to the COM1 port. To access the menu, select COM1 Configuration on the System menu and press **Enter**.

```
COM1 Configuration
► (*) Rear Window
• ( ) Video Projector
• Exit Menus
```

Main Menu → Setup → System → COM1 Configuration

Options:

Rear Window	COM1 outputs text for Rear Window display.
Video Projector	**COM1 is used to control the video projector.**

7.7.1.10. Set Password

The Set Password dialog box allows you to assign a three-digit password to protect access to the setup menus.

```
Password:

    [ 0 0 0 ]
      *
```

Main Menu → Setup → System → Set Password

When you set up a password, such as 123, to protect access, the following message will appear.

```
Confirm to set
password to 123
• Cancel
• OK
```

To cancel the password, select **Cancel.** The following message will appear. Press **Enter** to return to the set password form.

```
Password is NOT
changed.

[Enter]-Continue
```

To confirm the password, select **OK.** The following message will appear. Press **Enter** to return to the set password form.

```
Password is
changed.

[Enter]-Continue
```

If you forget your password, contact DTS Technical Service to receive help regaining access to the XD10.

7.7.1.11. Disable Password

The Password menu also allows you to provide full access to the setup menus by setting the password to the default setting: **000**.

```
Password:

    [ 0 0 0 ]
      *
```

Main Menu → Setup → System → Set Password

When you set the password to **000**, the following message will appear.

```
Confirm to disable
Password:
• Cancel
• OK
```

To cancel, select **Cancel** and the following message will appear. Press **Enter** to return to the set password form.

```
Password is NOT
changed.

[Enter]-Continue
```

To confirm, select **OK** from the previous menu, and the following message will appear. Press **Enter** to return to the set password form.

```
Password is now
disabled.

[Enter]-Continue
```

7.7.1.12. Change Password

To change the password, press **Enter** one time to return to the Set Password menu.

```
Password:

    [ 0 0 0 ]
      *
```

7.8. Network

The network is used for connection to either the DTS Cinema Media Network™ or the DTS MediaLink XD. This menu is used to set the network parameters to allow remote access to the XD10.

```
NETWORK MENU
• Network Mode
• Set Static IP
• View Address
• Server Type
• Notify Server
• Exit Menus
```

Main Menu → Setup → System → Network

Network Menu Overview:

Network Mode	Select between Static and DHCP server.
Set Static IP	Set the Static IP address.
View Address	Display the IP address, if connected.
Server Type	Select the XD10 interface program to communicate with the server.
Notify Server	Test function to help the server identify an XD10 connected to the network.

☑ If you change any network setting you must power cycle the XD10 for the changes to take affect.

7.8.1. Network Mode

This menu allows to you disable your connection to the network or select Static IP or DHCP mode.

```
Network Mode
• ( )Disabled
• ( )Static IP
• (*)DHCP Server
•    Exit Menus
```

Main Menu → Setup → System → Network → Network Mode

Options:

Disabled	Disable network interface.
Static IP	Select a specific IP to connect to the network.
DHCP	The XD10 make a request to a DHCP server on the network to automatically be assigned a dynamic IP address.

7.8.2. Static IP Address

This menu allows you to select a **Static IP Address**, along with other network addressing parameters.

```
STATIC IP ADDRESS
• IP Address
• Subnet Mask
• Default Gateway
• Primary DNS
• Secondary DNS
• Set Defaults
• Exit Menus
```

Main Menu → Setup → System → Network → Set Static IP

Options:

IP Address	Set Static IP Address
Subnet Mask	Set Static Subnet Mask Address
Default Gateway	Set Static Default Gateway Address
Primary DNS	Set Static Primary DNS Address
Secondary DNS	Set Static Secondary DNS Address
Set Defaults	Set all IP Addresses to defaults

7.8.2.1. Set Static IP Address

This menu allows you to select and enter a Static IP Address.

```
Set IP Address:


000.000.000.000
     *
```

Main → Setup → System → Network → Set Static IP → IP Address

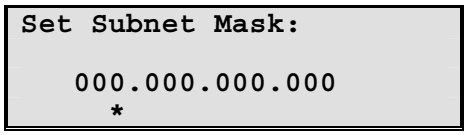
The cursor ('*') is below one of the four three-digit fields. Each field has a value between 000 and 255.

Commands:

▲	Increases field by 1. Wraps from 255 to 000.
▼	Decreases field by 1. Wraps from 000 to 255.
◄	Moves cursor to the left, or, if at the first position, returns to the *Static IP Address* menu.
►	Moves cursor to the right.
Enter	Selects value and returns to *Static IP Address* menu.

7.8.2.2. Set Subnet Mask

This menu allows you to select and enter a static Subnet Mask IP Address.



Main Menu → Setup → System → Network → Set Static IP → Subnet Mask

The cursor ('*') is below one of the four three-digit fields. Each field has a value between 000 and 255.

Commands:

▲	Increases field by 1. Wraps from 255 to 000.
▼	Decreases field by 1. Wraps from 000 to 255.
◄	Moves cursor to the left, or, if at the first position, returns to the *Set Subnet Mask* menu.
►	Moves cursor to the right.
Enter	Selects value and returns to *Set Subnet Mask* menu.

7.8.2.3. Set Default Gateway

This menu allows you to select and enter a static Default Gateway IP Address.

```
Set Default
Gateway:

   000.000.000.000
     *
```

Main Menu → Setup → System → Network → Set Static IP → Default Gateway

The cursor ('*') is below one of the four three-digit fields. Each field has a value between 000 and 255.

Commands:

▲	Increases field by 1. Wraps from 255 to 000.
▼	Decreases field by 1. Wraps from 000 to 255.
◄	Moves cursor to the left, or, if at the first position, returns to the *Set Default Gateway* menu.
►	Moves cursor to the right.
Enter	Selects value and returns to *Set Default Gateway* menu.

7.8.2.4. Set Primary DNS

This menu allows you to enter a static Primary Domain Name Server's (DNS) IP Address.

```
Set Primary DNS

   000.000.000.000
     *
```

Main Menu → Setup → System → Network → Set Static IP → Primary DNS

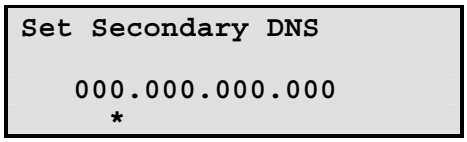
The cursor ('*') is below one of the four three-digit fields. Each field has a value between 000 and 255.

Commands:

▲	Increases field by 1. Wraps from 255 to 000.
▼	Decreases field by 1. Wraps from 000 to 255.
◄	Moves cursor to the left, or, if at the first position, returns to the *Set Primary DNS* menu.
►	Moves cursor to the right.
Enter	Selects value and returns to *Set Primary DNS* menu.

7.8.2.5. Set Secondary DNS

This menu allows you to enter a static Secondary DNS IP Address.



Main Menu → Setup → System → Network → Set Static IP → Secondary DNS

The cursor ('*') is below one of the four three-digit fields. Each field has a value between 000 and 255.

Commands:

▲	Increases field by 1. Wraps from 255 to 000.
▼	Decreases field by 1. Wraps from 000 to 255.
◄	Moves cursor to the left, or, if at the first position, returns to the *Set Secondary DNS* menu.
►	Moves cursor to the right.
Enter	Selects value and returns to *Set Secondary DNS* menu.

7.8.2.6. Set Defaults

This menu allows you to set all the IP Addresses to defaults. These include the system's IP Address, Subnet Mask, Default Gateway, Primary DNS, and Secondary DNS addresses.

```
Set Default Network
Addresses?
• No
• Yes (Set Default)
• Exit Menus
```

Main Menu → Setup → System → Network → Set Static IP → Set Defaults

If you select **No,** this screen will display. Press **Enter** to exit.

```
Network Addresses
Are not changed.

[Enter]-Return
```

If you select **Yes (Set Default)** from the Set Defaults menu**,** this screen will display. Press **Enter** to exit.

```
Network Addresses
Set to their
Default values.
[Enter]-Return
```

7.8.3. View Network IP Address

This menu allows you to see your XD10 Network IP Address. If your XD10 is not connected to a network, the following message will appear on the screen. Press **Enter** to exit.

```
Network IP Address:

(not connected)
```

Main Menu → Setup → System → Network → View Address

If your XD10 is connected to a network, a message similar to the following message will display on the screen.

```
Network IP Address:
[192.168.000.002]
```

7.8.4. Server Type

This menu selects the XD10 interface program to use for communicating with the network Server.

```
Server Type
• (*)Standard
• ( )Custom
•    Exit Menus
```

Main Menu → Setup → System → Network → Server Type

Options:

Standard	Select this option if connected to DTS MediaLink XD.
Custom	Select this if connected to the DTS Cinema Media Network™. This selection requires a CineCast license.

The following message appears if Custom is selected and the CineCast license is not installed.

```
Cinecast License
Is required.

[Enter]-Continue
```

Press **Enter** to return to the *Server Type* menu. The *Custom* option shows as selected, but the server interface will not operate until the license is installed.

7.8.5. Notify Server

This command sends a notification message to the server to identify the XD10 on the network.

```
Notification
message
Has been sent to
Central Server
[Enter]- Return
```

Main Menu → Setup → System → Network → Notify Server

Press **Enter** to return to the *Network* menu.

7.9. System Clock

The System Clock menus allow you to set and view the date, time and Time Zone for your XD10. These settings are needed for logging information and for playing video playlists with auto-start times.

Setting the Time Zone also allows the XD10 to automatically accommodate Daylight Savings Time.

☑ If you are using a NTP server, the date and time are set on a regular basis. But the Time Zone must be properly set.

```
SYSTEM CLOCK MENU
• Set Time Zone
• Set System Date
• Set System Time
• Exit Menus
```

Main Menu → Setup → System → System Clock

7.9.1. Set Time Zone

The Time Zone menu shows the current Time Zone set for the XD10. The following message displays when the Time Zone menu is selected:

```
Current Time Zone:
[Enter] to select
[America/Los_Angeles
]
```

Main Menu → Setup → System → System Clock → Set Time Zone

Commands:

◄	Return to *System Clock* menu.
Enter	Change Time Zone.

To change the Time Zone, it is necessary to enter a location, a country, and then finally a Time Zone. The following menu displays after pressing **Enter** to change the Time Zone:

```
Select Time Zone
Location:
[Americas]
```

Commands:

▲ or ▼	Cycle through list of locations: Americas, Africa, Pacific Ocean, Indian Ocean, Europe, Australia, Atlantic Ocean, Asia, Arctic Ocean, Antarctica.
◄	Return to the *Current Time Zone* menu.
Enter	Select location listed.

If you select Americas and press **Enter**, the following menu will appear.

```
Select Country
[United States]
```

Use the ▲ and ▼ buttons to cycle through the list of 58 countries.

When the country you want to select appears on the screen, press **Enter**. If you select United States, the following menu will appear.

```
Select Time Zone
And hit 'Enter'
[America/Los_Angeles
]
```

Scroll through the menu to see a list of cities. When you see the city you want to select, press **Enter**. This will activate your selection and take you back to the System Clock menu.

7.9.1.1. Set System Date

Start by accessing the System Clock menu. From the Main Menu, select **Setup → System → System Clock**. Scroll to Set System Date and press **Enter**, as shown below.

```
SYSTEM CLOCK MENU
• Set Time Zone
• Set System Date
• Set System Time
• Exit Menus
```

Main Menu → Setup → System → System Clock

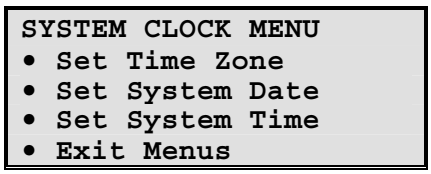
The Set Date menu, shown below, appears. Scroll to the third line and enter the date in month-day-year (MM:DD:YYYY) format, as shown below. Press **Enter** to confirm the entry.

```
Set Date:
[MM:DD:YYYY]
[05:22:2006]
  *
```

Main Menu → Setup → System → Set System Date

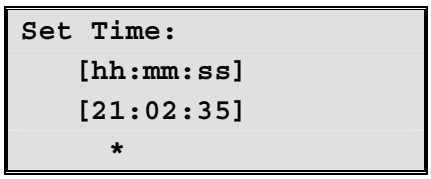
7.9.1.2. Set System Time

Start by accessing the System Clock menu. From the Main Menu, select **Setup → System → System Clock**. Scroll to **Set System Date** and press **Enter**, as shown below.



Main Menu → Setup → System → System Clock

Scroll to the third line and enter the time in hours:minutes:seconds (hh:mm:ss) format, as shown below and press **Enter** to confirm your entry.



Main Menu → Setup → System → Set System Time

7.10. Software Revert

The Revert operation allows the XD10 you are using to revert back to the previous version of XD10 software. It will only allow one step back (It will not revert back further than the previous version). Note: It the XD10 has been updated using a full install disc, it will not revert to a previous version.

Start by accessing the System Options menu. From the Main menu, select **Setup → System → Revert**, as shown below. Scroll to **Revert** and press **Enter**.

After you select **Revert**, the following menu will appear, asking for confirmation.

```
Revert to previous
Version?
► No
• Yes
```

Main Menu → Setup → System → Revert

Options:

No	System will continue to use current version of software
Yes	System will revert to previous version of software installed in the unit

If you select **No**, the following message will appear on the screen and the software revert will not take place. Press **Enter** to return to the System Options menu.

```
The program will
NOT revert to the
previous version
[Enter] - Continue
```

Main Menu → Setup → System → Revert → No

If you select **Yes**, the message shown below will appear on the screen. Press **Enter** to activate the software revert.

```
The program will
revert to the
previous version
[Enter] - Continue
```

Main Menu → Setup → System → Revert → Yes

When the Revert process is completed, the following message will appear on the XD10. This indicates the unit is ready for loading, playback or setup.

```
Ready
```

7.11. Display Language

This menu allows you to select the language displayed on the XD10's front panel LCD screen. English is the default.

Main Menu → Setup → Display Language