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<div>DEPARTMENT</div> Engineering	<div>CREATED BY:</div> F. Pflaum	<div>EFFECTIVE DATE</div> Sep. 1, 2004		<div>APPROVED BY:</div> L. Brown		

These instructions show how to update the software on the DTS XD10 to V1.01.16. The update takes only a few minutes to complete. The basic user interface and operation of the DTS XD10 remain the same after the upgrade is performed.

⚠ Important: New DTS feature discs may require that this update be installed in the DTS XD10. Otherwise, the disc will not play on that unit.

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Contents of Kit

DTS Software Upgrade Disc, DTS-6AD and DTS XD10, part number: 9311E96900

Upgrade Procedure

1. Turn on XD10 and allow it to initialize (if not already initialized). It normally takes two minutes to initialize.
2. Insert the DTS Software Upgrade disc into either XD10 disc drives. The update will proceed automatically and will display the following message when complete:

```

Loading Drive A
XD10 update complete
Please re-start XD10
[Enter]-Continue

```

3. Press the [ENTER] button to eject the Software Upgrade disc. Remove the disc and close the door.
4. Reset the XD10 by turning the front panel power switch OFF and then ON again. It will take about five minutes to initialize because it is resetting the firmware.


⚠ Caution: Do NOT turn power off/on during the reboot sequence. Please be patient.

5. Check the software version when the XD10 has finished initializing.

Checking the XD10 Software Version

1. Press [ENTER] to view the Main Menu.

Path:	
Date Last Printed: 9/2/2004	DTS PN 9303E97100
DTS, 5171 Clareton Dr., Agoura Hills, CA 91301	Contact Document Control for the latest revision.

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2. Press the ↓ key two times, then press [ENTER] to select the Info menu.

```

MAIN MENU
* Playback
* Setup
→ Info
  
```

3. In the Info Menu press [ENTER] to select Version.

```

INFO MENU
→ Version
* MAC Address
* Exit Menus
  
```

4. The version screen should look like this example:

```


DTS-XD10 101.16
Sep 01 2004 12:49:28
Copyright (c) 2001
By Digital Theater
  
```

DTS Technical Support

Refer questions to DTS Technical Support:

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<div>DEPARTMENT</div> <div>Engineering</div>	<div>CREATED BY:</div> <div>F. Pflaum</div>	<div>EFFECTIVE DATE</div> <div>Sept. 09, 2004</div>		<div>APPROVED BY:</div> <div>L. Brown</div>		

This software update for the XD10 is to be installed in all XD10 units. The update provides some new features, and corrects some problems in the previous version, as detailed below. This update **MUST** be installed to enable future XD10 operation with enhanced audio discs.

Version

After updating the XD10 software, this version number should display on the user interface:

DTS-XD10 101.16
Sept 01 2004 12:49:28

Software Updates/Fixes from V1.00.20

1. Enhanced Audio Playback

This software contains the update for playback of DTS enhanced audio discs.

2. Reel Change Error Fix

Fixed a playback problem that occurred when playing a feature that had different serial numbers across reel changes. The player was dropping out of digital when the reel change to a different serial number occurred.

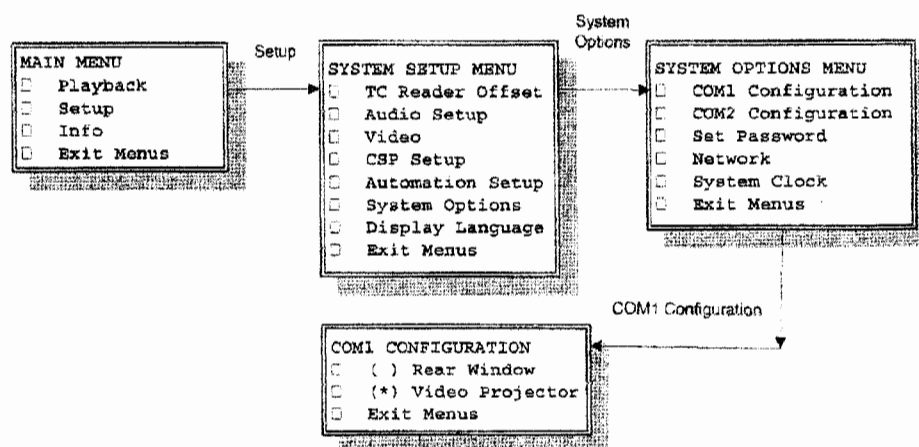
3. Removed unnecessary Error Message when loading disc

Fixed a problem with an incorrect error message displaying when loading a feature disc(s) that uses alternate serial numbers for one or more reels. The message warned the operator and asked them to press ENTER to ignore the error. The program was fixed to look for matches with the alternate serial number, to validate that the audio files were part of the same set.

4. Video Projector Control using COM1

Added a setup screen to use the COM1 port for either Rear Window (default) or video projector control. See notes below for video projector control mode.


The menu is under SETUP → System Options → COM1 Configuration as shown below:



The options in this menu are:

- Rear Window

This is the default. It sets COM1 to be used for Rear Window. The Rear Window feature will work as it did previously, when this option is selected.

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- Video Projector

This allows COM1 to be used for controlling a video projector. See information below regarding the video projector control.

- ☒ **Note:** When COM1 is set for projector, the “READY” string command is not transmitted out the serial port on COM1 when the XD10 starts up.

Video Projector Control Operating Details

The following are in effect only when COM1 configuration is set to Video Projector through the menu.

Baud Rate

The baud rate for COM1 is set to 19200 8N1.

Start/Stop Projector Commands

The start command is transmitted when the video playback starts and the stop command is transmitted when the playback terminates. The timing corresponds with that of the DTS Playback LED on the front panel.

The start projector command is:

C00<CR>

The stop projector command is:

C01<CR>

5. Video Playback Termination

The video playback was modified to correctly terminate video playback. When the playlist has completed, the DTS Playback LED will now go OFF, and the system is ready to play soundtrack audio.

6. Video Stop Output

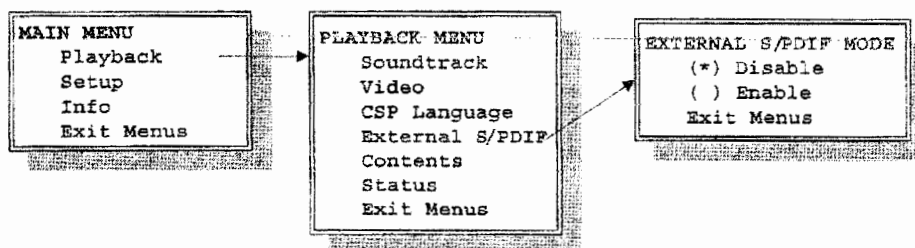
Fixed the “Video Stop” output signal. When the video playback terminates, there will now be a negative pulse on the corresponding output pin when that pin is assigned to be the “Video Stop” function. (This is set in the menu: System Setup → Automation Setup → I/O Control → Pin Definitions → Output.)

7. Subtitles Initializes with Blue Background

Fixed a problem with the subtitle projector initializing with a blue background color (instead of black). This problem occurred only when a color video projector was being used for CSS captions or subtitles.

8. External S/PDIF Mode -- Menu Option

External S/PDIF input is selectable through a menu item. The menu selection to enable or disable the S/PDIF mode is shown below.



When enabled, the XD10 will automatically pulse the DTS format pulse. There is no format pulse when the SP/DIF mode is disabled.



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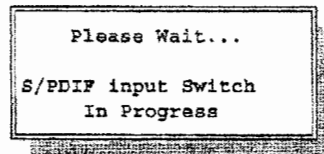
DEPARTMENT
Engineering

CREATED BY:
F. Pflaum

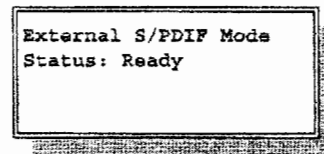
EFFECTIVE DATE
Sept. 09, 2004

APPROVED BY:
L. Brown

It may take about 3 seconds to enable or disable the S/PDIF mode. The following message displays until the switch is complete:



The DTS Playback indicator will be lighted while the external S/PDIF mode is enabled. Also the format screen (top-most level) will display the S/PDIF mode as shown below.



- ☒ **Note:** If the XD10 has the video option installed, then the S/PDIF connector from the Video card must be unplugged while the external S/PDIF is in use.

9. External S/PDIF Mode – Control Input

Added the following two pin definitions for the menus under Setup → Automation Setup → I/O Control → Pin Definitions → Inputs:

- S/PDIF On
- S/PDIF Off

These functions mirror the operation of enable and disable S/PDIF functions using the menu.

10. Correction for Input Control Pin Definitions

Fixed an error in the assignments for the control input pin definitions under Setup → Automation Setup → I/O Control → Pin Definitions → Inputs.

The following shows how menu definitions correspond to the input pin on the Phoenix connector:

Previous Version

INPUT CONTROL PINS (menu definition)	Phoenix Connector Pin Number
In 1	---
In 2	2
In 3	3

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Corrected Version

INPUT CONTROL PINS (menu definition)	Phoenix Connector Pin Number
In 1	2
In 2	3
In 3	4

- ☒ **Note:** When updating the software, the functions assigned to the physical pin remain the same, so existing wiring does not need to be modified. The only change is to the definitions in the menu. For example, the assignment made for In 2 (pin 2) will become In 1 (pin 2).

11. Correction for CSP Vertical alignment error

The vertical position of the CSP alignment pattern was corrected. The previous version was 12 pixels too low, resulting in the subtitles appearing 12 pixels higher than the subtitle area.

The CSP alignment pattern and the projected subtitles will now be aligned correctly.

The patterns affected are in the following menus:

Setup → CSP Setup → Image Size
 Setup → CSP Setup → Vertical Offset
 Setup → CSP Setup → Test Pattern → Mask Area
 Setup → CSP Setup → Test Pattern → View Area

12. CSP with Video Option: Alignment Error

This fix relates to a problem that only occurred with the XD10 that had both CSP and video options installed.

The CSP could be turned on while the XD10 was in video mode and the CSP would not have the blue screen to lock the input image. The result was that the CSP subtitles appeared shifted to the left of the image when displayed.

To avoid the problem, software now switches the video mode to CSP (blue screen) when the projector is turned on.

- ☒ **Note:** Projector must be turned on by the XD10 (through serial control) – not at the projector – in order to work properly.

13. Channel Text Correction

Fixed an incorrect channel assignment in the audio level adjustment screen. The menu is under Setup → Audio Setup → Level Adjustment → Reference Tone or Pink Noise


The new assignments are:

Channel Number	Channel Name
Ch7	Left Center
Ch8	Right Center

14. Panastereo and Smart CP Automation Presets

Added Automation presets for Panastereo and Smart cinema processors. The presets are added in the menu list under: Setup → Automation Setup → Format → Pin Definitions → Predefined Formats

The list now includes:

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- () CSP1200
- () Smart CP

The pin assignments for both cinema processors are as follows:

Format Pin	Assignment
1	Mono
2	A
3	SR(1)
4	Unused
5	DTS (Pulse)
6	Unused
7	Nonsync (1)
8	Unused

15. Fallback to A type when SR is not present

The software has been updated so that if the fallback format is set to be SR (1) and that pin is not defined as a one of the format pins, then the fallback format will switch to A. This is designed to fix a problem that occurs with cinema processors that do not have an SR decoder and the soundtrack format is set to "Automatic". If the cinema processor did not have an SR (1) pin defined then the fallback would not work. An alternate solution required rewiring the format signals to work properly. This fix allows the switch to be done in software without modifying the automation wiring.

16. Correction for fallback to nonsync at end of show when predefined fallback format is set

The software has been fixed so that the nonsync (1) pin is the fallback format for the last two minutes of the film. In the previous version the nonsync (1) format pulse at the end of film would only work if the soundtrack fallback format was set to "Automatic".

17. Format Pulse Delay

The software has been modified so that a format automation pulse will not occur while another pulse is still active. The program will wait for 100 ms after the last format pulse has ended before the setting a new format pulse. This was done in order to fix possible problems with cinema processors missing a format pulse from the XD10.

18. CSP Setup Image for XD10 with Video Option

This update fixes a problem where the CSP setup images would not appear if the XD10 has the video option. The program will now switch video mode from video to CSP when entering one of the CSP setup menus. The CSP setup images will not appear if the unit is currently playing video.

19. Sound Repeat Error for 8-channel or 6-channel discrete soundtrack

Fixes a problem with 8-channel or 6-channel audio playback that caused repeating about 500ms of audio when starting playback. The repeated audio would only occur within the first 3 seconds of the playback. This removes the repeated audio, although a small audible click is possible within the first 3 seconds.

20. Fallback Recovery

Fixes a problem with the unit recovering from a fallback due to a program busy error. With the error, the XD10 would switch to the fallback format and display the "Player Disabled" message. The program would recover shortly after and appear to be playing as normal with the blue LED lighted; however, the format pulse to set the processor to the digital format did not occur. This update adds the pulse back to digital format after an error condition.