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# **Model No. 2034CL-AC (& 2034CL-AC-T)**

## **300 CLIP INSTANT ACCESS SYSTEM**

**For Control of ACCOM Video Servers**

**VERSION 3.1 SOFTWARE**

# **User Manual**

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# 1. REVISION HISTORY

020105 1.0

Original document.

## *Getting Started . . .*

### **2. SYSTEM DESCRIPTION**

The 300 Clip Instant Access System consists of the ST300-SSM VTR Controller, STS420 Shotbox, and Shotlist Software.

This controller controls video servers made by ACCOM.

Any clip in the SHOTLIST can be quickly loaded by simply entering the associated 3-digit number of its location, then pressing **[LOAD]**. Press **[PLAY]** to play the clip. Press **[RECUE]** to recue to the beginning of the clip or to the “recalled” time if defined.

### **DEFINITIONS**

- ❑ Throughout this document VTR, DDR, VDR & Video Server will be referred to collectively as “Video Server.”
- ❑ The ST300-S/SM as the ST300.
- ❑ The ST420 SHOTBOX is referred to as “SHOTBOX.” “SHOTKEY” refers to the 1-30 switches on the SHOTBOX.
- ❑ Words surrounded by brackets, for example, **[ENTER]**, are keys on the ST300 or the SHOTBOX. **[XXX] + [XXX]** means hold the two keys down simultaneously.
- ❑ Words surrounded by “curly” brackets in bold/italic type, ***{UPDATES}***, are softkeys on the ST300.

### 3. SYSTEM INSTALLATION

#### a. SHOTBOX

- 1) Plug one end of a standard 9-pin, RS422 serial cable, into the OUTPUT connector on the rear of the SHOTBOX. Plug the other end of the cable into the AUX connector on the rear of the ST300.
- 2) Connect the Ault Model #SW300 POWER SUPPLY into the POWER connector on the rear of the SHOTBOX. Plug the Power Supply into an outlet, 90 VAC – 240 VAC.
- 3) The version of the ST420 must comply in the software version with the ST300 it is connected to.

To determine the software version of the ST420 do the following:

- a) Press **[SHIFT] + [STOP] + [PLAY]**.  
The key that displays the current version is RED.
- b) The ST420 displays:  
“SELECT ST300 V2.1 or V2.0 or V3.0” (for ST420 version below 4.14).

Press the key for the software version of ST300 being used.  
Please refer to the ST300 to determine the Version if needed.  
**OR** (for ST420 Vs. 4.14 and above):

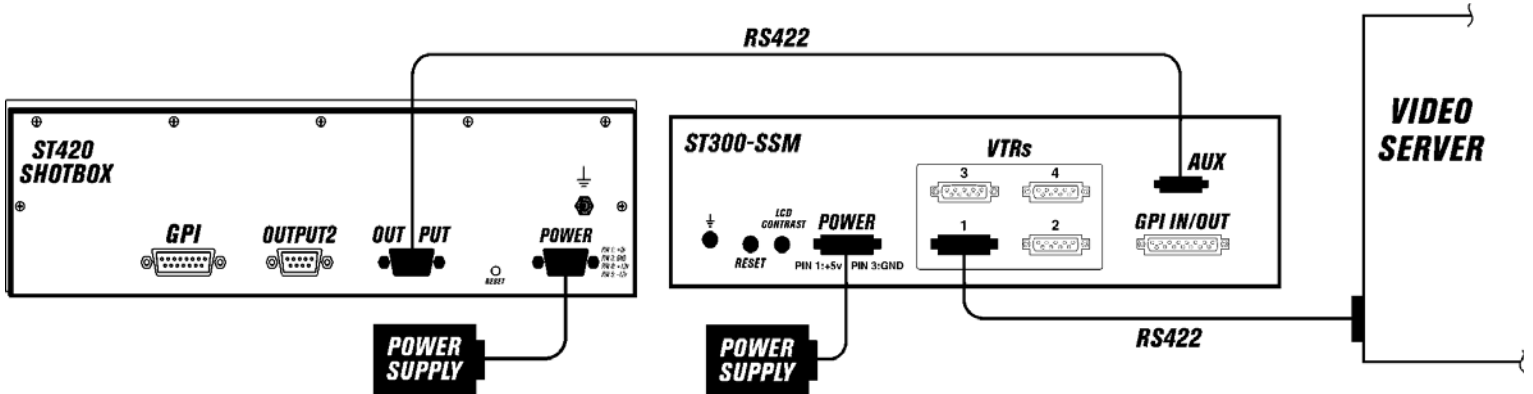
Select the shotkey that indicates “ST300 V3.X”

#### b. ST300-S/SM, VTR/DDR CONTROLLER

- 1) Plug one end of a 9-conductor, RS422 serial cable into the VTR 1 (2, 3 or 4) connector on the rear of the ST300. Plug the other end of the cable into the REMOTE connector on the Video Server.
- 2) Connect the supplied POWER SUPPLY, APX#4108, into the POWER connector on the rear of the ST300. Plug the Power Supply into an outlet, 90 VAC – 240 VAC.
- 3) Check SETUP MENU prior to using the ST300 to confirm proper Record mode and other User settable modes.

Installation is complete.

# CONNECTION DIAGRAM



## 4. VIDEO SERVER SETUP

Assign a serial port on the VIDEO SERVER through which the ST300 will control the server.

The ST300 can only access video clips with numeric IDs in the range from 0 to 2147483647. The ST300 cannot load clips with alphabetical IDs or the IDs out of the range.

Setup is complete.

## 5. LOAD A CLIP

- a. Select a VTR by pressing VTR [1], VTR [2], VTR [3], or VTR [4].
- b. Press **[CLIP LIST]** to enter the Clip ID. The CLIP LIST indicator will turn on.
- c. Manually enter a numeric CLIP ID using the ST300 numeric keypad, or PC keyboard (if KBIO option).  
**OR**  
Manually enter a Clip ID using the Qwerty keyboard on SHOTBOX.
- d. Press **[LOAD]** to load the selected CLIP ID for playout.
- e. Locate the clip to the desired IN time. Press **[IN]** to mark the IN time. (Optional)
- f. Locate the clip to the desired OUT time. Press **[OUT]** to mark the OUT time. (Optional)
- g. Repeat steps a. – f. until clips are loaded into the desired VTRs. (Optional)
- h. Set the GANG mode, if required. (Optional)

## 6. VIEW THE CLIP ID OF THE CURRENTLY LOADED CLIP

Press **[SHIFT] + [LOAD]**. The bottom line will show the name of the loaded clip.

## 7. LEARN A CLIP OR CLIP COMBINATION

### a. LEARN ON THE SHOTBOX

- 1) Load clip(s) on the desired VTRs. (See Section “LOAD A CLIP.”)
- 2) Press **[LEARN]**. The LEARN indicator will turn on.
- 3) Select the desired BANK and ShotKey.
- 4) Press **[LEARN]** to exit at anytime.  
**NOTE:** The **[LEARN]** key toggles LEARN mode on/off.

The controller will: LEARN (save) the VTR Number (1,2,3,4), loaded CLIP ID and current IN and OUT time to the selected Cue Point.

### b. LEARN ON THE ST300

- 1) Load clip(s) on the desired VTRs. (See Section “LOAD A CLIP.”)
- 2) Select the desired Cue Point by pressing **[NEXT CUE]**, **[LAST CUE]** or by manually entering the Cue Point using the numeric keypad.

The selected Cue Point number is shown on the bottom line of the display.

- 3) Press **[SHIFT] + [MARK]** to initiate the LEARN.

The display will show:

Select VTRs: LEARN-done, ESC-exit
--------------------------------------

- 4) Press the VTR key desired: **[1]**, **[2]**, **[3]**, **[4]**.
- 5) Press **[MARK]** and the ST300 will:  
LEARN (save) the VTR Number (1, 2, 3, 4), loaded CLIP ID and current IN/OUT time to the selected Cue Point.

## 8. RECALL A CLIP OR CLIP COMBINATION

### a. RECALL ON THE SHOTBOX

- 1) Select the desired Bank.
- 2) Press the desired shotkey.

The ST300 will automatically load the learned clips on the learned VTRs, cue the clips to the Learned time, then set the Learned Gang Mode. If RECALL MODE, in the Setup Menu, is set to REDIR, and a cue point contains only one clip, then the clip will be REDIRECTED to load on the currently selected VTR, not the Learned VTR.

### b. RECALL ON THE ST300

- 1) Select the desired Cue Point by pressing [NEXT CUE], [LAST CUE] or by manually entering the Cue Point on the numeric keypad.

The selected Cue Point number is on the bottom line of the display.

- 2) Press [LOAD].

The ST300 will automatically load the Learned clips on the Learned VTRs, cue the clips to the Learned time, then set the Learned GANG mode. If RECALL MODE, in the Setup Menu, is set to REDIR, and a cue point contains only one clip, then the clip will be REDIRECTED to load on the currently selected VTR, not the Learned VTR.

## 9. RECUE THE CURRENTLY LOADED CLIP

Press [RECUE]. If an IN Point is marked (the IN indicator is on), the clip will RECUE to the IN Point.

If the IN point is not marked, the clip will RECUE to the start of the clip.

**OR**

Press [SHIFT] + [RECUE].

- a. Enter the desired time to search to using the ST300's numeric keypad.
- b. Press [ENTER] to search to the entered time.

**OR**

Press [ESC] to exit without searching.

## 10. PLAY CLIP

- a. Load a clip from Cliplist or Recall a learned clip.
- b. Mark IN (OUT) points if desired. (See Section “**SETTING THE IN (OUT) POINTS.**”)
- c. Press **[PLAY]**.  
The clip will play from the current point to the OUT point or, if no OUT point is marked, to the end of the clip.  
If Autorecue Option is ON (see Setup Menu), the clip will recue to the IN point (or the beginning of the clip) once the OUT point (or the end of the clip) is reached.

## 11. LOOP CLIP

- a. LOAD a clip from CLIPLIST or RECALL a learned clip.
- b. Press **[LOOP ENABLE]** to loop a loaded clip. The LOOP ENABLE indicator will turn on. The second line of the display will show “Looping clip . . .”
- c. Press **[STOP]** to stop the loop play.

## 12. PING-PONG CLIP

- a. Load a clip from CLIPLIST or RECALL a learned clip
- b. Press **[SHIFT] + [LOOP ENABLE]** to ping-pong the loaded clip (play forward to the OUT Point/End of Clip, then play backward to the IN point/start of Clip, etc.) The second line of the display indicates “Ping-Pong Play...”
- c. Press **[STOP]** to stop the payout.

## 13. SETTING THE IN (OUT) POINTS

### a. MARKING THE IN (OUT) POINT

- 1) Locate the clip to the desired IN (OUT) time.
- 2) Press **[IN]** (**[OUT]**) to set the IN (OUT) Point. The IN (OUT) indicator will turn on.  
The display will show “IN (OUT) xx:xx:xx:xx” where xx:xx:xx:xx is the saved time.

### b. ENTERING THE IN (OUT) POINTS

- 1) Press **[SHIFT] + [IN]** (**[OUT]**) to manually enter a new IN (OUT) time.
- 2) Press **[ENTER]** to save the entered time or press **[ESC]** to exit without saving.

**c. VIEWING THE IN (OUT) POINTS**

When the IN (OUT) indicator is on,  
Press [IN] ([OUT]) to view the existing IN (OUT) Point.

**d. CLEARING THE IN (OUT) POINT**

Press and hold [DEL], then press and release [IN] ([OUT]).  
The IN (OUT) indicator goes off.

## **14. BVW MODE**

If you wish to control a tape machine or a DDR with the 2034CL-AC system, select control MODE=BVW (see Setup Menu section). In this mode, the media is accessed by timecode, not by clip names. The cuepoints in BVW mode consist only of IN point, OUT point and Gang information.

The following functions are not available in BVW mode:

- Load Clip ID
- Recue Clip
- Loop Clip
- Ping-Pong Clip

All other functions work as described in the manual.

## 15. LEARN A TIMECODE (BVW MODE)

- a. Select the desired Cue Point by pressing **[NEXT CUE]**, **[LAST CUE]**, or by manually entering the Cue Point using the numeric keypad.

The selected Cue Point number is shown on the bottom line of the display.

- b. Locate the clip to the desired IN time. Press **[IN]** to mark the IN time.
- c. Locate the clip to the desired OUT time. Press **[OUT]** to mark the OUT time.

- d. Press **[SHIFT] + [MARK]** to start the LEARN.  
The first line of the display will show "Select VTRs:"  
The second line of the display will show "LEARN-Done, ESC-exit."

- e. Press **VTR[1]**, **VTR[2]**, **VTR[3]** or **VTR[4]** to select the VTR to be learned into the current Cue Point.

If the VTRs are ganged, select one VTR that is part of the Gang. The rest of the Gang will learn automatically.

- f. Press **[MARK]** to complete the LEARN.  
**OR**

Press **[ESC]** to exit without LEARNING.

The ST300 will: LEARN (save) the VTR number (1,2,3,4) and current IN & OUT time to the selected Cue Point.

## 16. CREATE CUE POINT LABELS

Use LABELS mode to assign meaningful names to cue points. Rather than viewing cryptic CLIP IDs on the Shotkeys, LABELS provides a faster and easier method to select cue points.

If different parts of the same clip are assigned to many Shotkeys, LABELS allows a unique name to be assigned to each Shotkey.

### ON THE ST300

- a. Select cue point to label.
- b. Press **[SHIFT]** + **[CLIPLIST]**.
- c. Manually enter a label, up to 12 characters in length, using the numeric keypad, ST420 Shotbox QWERTY keyboard, or PC keyboard.
- d. Press the **[LOAD]** shotkey on the Shotbox to assign the entered label to the selected cue point.

**OR**

**[ENTER]** on the PC keyboard or the ST300 to assign the label; press **[ESC]** to abort label entry.

Now the shotkeys and the 2<sup>nd</sup> line of the display show the label associated with the cue point instead of the Clip ID or timecode.

**NOTE:** Labels are saved in non-volatile memory in the ST300, not in the Shotbox. They are not saved in the video server.

## *Advanced Features . . .*

### **17. VIEW SHOTBOX SHOTKEY ASSIGNMENTS**

- a. Press and hold [VIEW]. The VIEW indicator comes on.
- b. Press and hold the desired shotkey.
- c. The switch turns RED and the content (CLIP ID) is displayed on a virtual display.

For Example:

<b>VTR 1</b> <b>Clip 23</b>	<b>VTR 2</b> <b>Clip 13</b>	<b>VTR 3</b> <b>Clip 77</b>	<b>VTR 4</b> <b>No Assignment</b>
--------------------------------	--------------------------------	--------------------------------	--------------------------------------

**NOTE:** All the remaining switches are not illuminated.

- d. Release the keys to return to normal operation.

### **18. SHOTBOX SHOTKEY MAPS**

The SWITCHES on the SHOTBOX access the SHOTLIST locations as follows:

BANK 0, SWITCHES 1 → 30 access Cue Point locations 001 → 030.  
BANK 1, SWITCHES 1 → 30 access Cue Point locations 101 → 130.  
BANK 2, SWITCHES 1 → 30 access Cue Point locations 201 → 230.  
BANK 3, SWITCHES 1 → 30 access Cue Point locations 301 → 330.  
BANK 4, SWITCHES 1 → 50 access Cue Point locations 401 → 430.  
BANK 5, SWITCHES 1 → 30 access Cue Point locations 501 → 530.  
BANK 6, SWITCHES 1 → 30 access Cue Point locations 601 → 630.  
BANK 7, SWITCHES 1 → 30 access Cue Point locations 701 → 730.  
BANK 8, SWITCHES 1 → 30 access Cue Point locations 801 → 830.  
BANK 9, SWITCHES 1 → 30 access Cue Point locations 901 → 930.

### **19. SHOTBOX CONTROL SWITCHES**

- a. [PLAY]: Plays out the selected clip.
- b. [RECUE]: Returns to the beginning of the clip.
- c. [STOP]: Stops payout of the clip.
- d. [SHIFT] + [SHOTKEY]: Clears the contents of the pressed shotkey.

### **20. CLEAR SINGLE CUEPOINT**

On the Shotbox, press [SHIFT] + the Shotkey, the content of which you wish to clear.  
The Shotkey becomes blank, the corresponding cuepoint and a label associated with it are cleared.

## 21. TRANSFER CUE LIST

### a. TRANSMIT CUE LIST FUNCTION

The TRANSMIT CUE LIST function allows you to transmit your list of Cue Points to a PC, using the provided utility software on the PC, or to another ST300. Transfer to a PC requires OpSuite 3.0 software, which runs on a Windows-based computer. Contact DNF Controls for more information.

#### 1) To Transmit Cue Points to Another ST300:

- a) Connect the VTR4 connector on the rear of the ST300 to the VTR4 connector of the receiving ST300 using an RS422 9-pin cable with TX and RX lines crossed. (A “turnaround” cable.)
- b) Press [MENU].
- c) Scroll the Wheel until “Transmit CUE list? YES=Enter, Exit=ESC” is displayed.
- d) Press [ENTER] to start transmitting. The Display shows “Waiting to transmit” on the first line.
- e) When the Receiver is ready, transfer starts automatically. The Display now shows “Transmitting cuelist.”
- f) After the transfer is over, the display shows “Transfer is over” for one second and then shows “Waiting to transmit” again.
- g) Connect another ST300 to transmit the list again.

**OR**

Press [ESC] twice to exit the MENU mode.

#### 2) To Transmit Cue Points to a PC:

- a) Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using a RS422 to RS232 adapter.
- b) Repeat steps a) thru g) of “To Transmit Cue Points to Another ST300” section.

## **b. RECEIVE CUE LIST FUNCTION**

The RECEIVE CUELIST function allows you to receive a list of Cue Points from a PC or from another ST300. Transfer to a PC requires OpSuite 3.0 software, which runs on a Windows-based computer. Contact DNF Controls for more information.

### **1) To Receive Cue Points From Another ST300**

- a) Connect the VTR4 connector on the back of the ST300 from the VTR4 connector of the transmitting ST300 using RS422 9-pin cable with TX and RX lines crossed.  
(A “Turnaround” Cable)
- b) Press [**MENU**].
- c) Scroll the Wheel until “Receive CUE List? YES=Enter, Exit=ESC” is displayed.
- d) Press [**ENTER**] to start receiving.  
The Display shows “Waiting to receive” on the first line.
- e) When the Transmitter is ready, transfer starts automatically.  
The Display now shows “Receiving cuelist.”
- f) After the transfer is over the display shows “Done-Success! Press any key...”
- g) Press any key. The display shows “Receive cuelist?” message.
- h) Press [**ESC**] to exit the MENU mode.

### **2) To Receive Cue Points From the PC**

- a) Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using RS422 to RS232 adapter.
- b) Repeat steps a) – h) of “**To Receive Cue Points From Another ST300**” section.

## Reference . . .

### 22. SETUP MENU

Press [MENU]. The MENU indicator will turn on.

Turn the Wheel to select item to change.

Press [MENU] **OR** use the Softkeys to change the desired mode for that option.

Turn the Wheel at anytime to select another item.

Press [ESC] at anytime to exit SETUP MENU. The MENU indicator will turn off.

<u>MENU MODES</u>	<u>(Turning Wheel Clockwise)</u>
<b>RECORD</b>	Set each VTR as required. Press [MENU] to select the desired record mode: Assemble, Insert, Lockout or Crash (Full).
<b>WIND MODE</b>	Press Softkey to select: <i>{HOLD}</i> (fast wind is maintained only while key is depressed). <b>OR</b> <i>{LATCH}</i> (fast wind is initiated and maintained with momentary key press).  Select fast wind speed (03.9X, etc.) by pressing <i>{SPD}</i> Softkey.
<b>SLOMO</b>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>ST300 display shows (Non T-Bar version):</p> </div> <div style="width: 50%; border: 1px solid black; padding: 5px;"> <p>SLOMO with:                   WHEEL</p> <p><b>SpdRange</b>                   <b>Preset</b></p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p>ST300 display shows (T-Bar version):</p> </div> <div style="width: 50%; border: 1px solid black; padding: 5px;"> <p>SLOMO with:                   TBAR</p> <p><b>Wheel</b>   <b>SpdRange</b>   <b>Preset</b></p> </div> </div> <p>Press Softkey <i>{TBAR}</i> (or <i>{WHEEL}</i>) to toggle between T-BAR and WHEEL.</p> <p><b>NOTE</b> - The T-BAR has a fixed speed range of 0 → +200 with a detent at +100% play speed.</p> <p><b>For Wheel only:</b> Press Softkey <i>{SPDRANGE}</i> to select SLOMO speed ranges:</p> <p>Press Softkey to select 0 → +200 <b>OR</b> -100 → +200. Press Softkey <i>{BACK}</i> to return to SLOMO MENU.</p> <p>Press [ESC] to exit SETUP MENU. <b>OR</b> turn the Wheel to select another item.</p> <p>(Continued on next page.)</p>

	<p><b>For Wheel only:</b> Press Softkey <i>{PRSET}</i> to select the SLOMO Preset Speed Mode.</p> <p>Press Softkey <i>{UPDATE}</i>. When exiting SLOMO mode, the last used speed is saved in the Preset Speed register.</p> <p><b>OR</b> Press Softkey <i>{STATIC}</i>. The Preset Speed register is NOT updated when exiting SLOMO mode. It is only changed by [SHIFT] + [SLOMO] (PRESET SLOMO).</p>				
<b>GANG MODE</b>	<p>Press Softkey to select <i>{PERMANENT}</i> GANG (described in the FUNCTION Table) or <i>{TEMPORARY}</i> GANG.</p> <p>In TEMPORARY mode, press and hold the VTR key that you want to read status from, then press the VTR#s of those VTRs that you want to include in the gang. Release the keys. The LED on the monitored VTR blinks, all other VTRs in the gang stay on constantly. To break the temporary gang, press any VTR# key.</p>				
<b>ST300 SETUP</b>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2" style="text-align: center;">ST300 SETUP</td> </tr> <tr> <td style="text-align: center;">Clear Cues</td> <td style="text-align: center;">SetDefault</td> </tr> </table> <p>Press Softkey beneath <i>{ClearCues}</i> to clear all Cue Points and Labels to 00:00:00:00. Press Softkey <i>{YES}</i> when asked “Are You Sure?”</p> <p>Press Softkey beneath <i>{SetDefault}</i> to set ST300 to default settings. Press Softkey <i>{YES}</i> when asked “Are You Sure?”</p> <p><b>IMPORTANT NOTE:</b> Please set these items during initial installation.</p>	ST300 SETUP		Clear Cues	SetDefault
ST300 SETUP					
Clear Cues	SetDefault				
<b>DISPLAY SOFTWARE VERSION</b>	<p>The version number and date for the currently installed software is displayed. For example:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">2034CL-AC</td> <td style="text-align: center;">V3.1</td> </tr> <tr> <td></td> <td style="text-align: center;">072400</td> </tr> </table>	2034CL-AC	V3.1		072400
2034CL-AC	V3.1				
	072400				
<b>SYNC</b>	<p>Set to <i>{ENABLE}</i> if black burst is supplied to the Ref Video connector on the rear panel. Set to <i>{DISABLE}</i> if no blackburst is supplied.</p>				
<b>AUTO RECUE</b>	<p>If Set to <i>{ON}</i> the video automatically recues back to the IN point (or to the beginning of the clip if there is no IN point) after the playout reaches OUT point (or the end of the clip).</p>				
<b>RECORD</b>	<p>Press Softkey to select single button or 2-button record. RECORD = [REC] Only. <b>OR</b> [REC] + [PLAY].</p>				
<b>RECALL MODE</b>	<p>Press <i>{NORMAL}</i> or <i>{REDIR}</i> (redirect).</p> <p><b>NORMAL -</b> The cue point will load on the learned VTR.</p> <p><b>REDIR -</b> When one and only one clip is learned into a Cue Point, the Clip will be REDIRECTED to load on the currently selected VTR.</p>				

<b>CONTROL MODE SELECT</b>	Select Control mode ACCOM\BVW. Have ACCOM selected for video server control and clip access. Have BVW selected to access media by timecode.
<b>TRANSMIT CUELIST</b>	Transmit Cuelist to another ST300 or to a PC. See "Transfer Cue List" section.
<b>RECEIVE CUELIST</b>	Receive Cuelist from another ST300 or a PC. See "Transfer Cue List" section.

## 23. FUNCTION TABLE

FUNCTION	KEY PRESS	DESCRIPTION
GOTO ENTERED TIME	[SHIFT] + [RECUE]	Search the VTR to the manually entered time.  Use the ST300 numeric keypad. To manually enter the desired time press [ENTER] or [RECUE].
GANG	[SHIFT]+[VTR #1] OR [SHIFT]+[VTR #2] OR [SHIFT]+[VTR #3] OR [SHIFT]+[VTR #4]	Individually press the VTR keys to be included in the gang; the LED above the key will turn on. Press the VTR key again to remove from gang; the LED above the key will turn off. Press [ESC] to exit.  The VTR LEDs that are on show the gang. The flashing LED shows which VTR is currently selected.  This mechanism is only used when Gang set to Permanent in Setup Menu.
FFWD	[FFWD]	Press and HOLD to FFWD. Release key to stop. Set WIND Speed in MENU.
JOG	[JOG]	Select JOG mode and enable Wheel.
LAST CUE	[LAST CUE]	Step to the previous Cue Point Location.
LOOP CLIP	[LOOP ENABLE]	Play the currently loaded clip or a part between IN and OUT points in a continuous loop.
NEXT CUE	[NEXT CUE]	Step to the next Cue Point Location.
RECORD	[REC]	Places VTR into the Record mode selected by RECORD MODE in the SETUP MENU. Press [RECORD] or [RECORD] + [PLAY].
REWIND	[RWD]	Press and HOLD to REWIND. Release key to stop. Set WIND Speed in MENU.
SHUTTLE	[SHUTTLE]	Select SHUTTLE mode and enable Wheel.
SLOMO	[SLOMO]	Press [SLOMO] to slo-mo the VTR. Turn the Wheel (or move the T-Bar, if available) to change the play speed. Press [SLOMO] to STILL frame OR press any transport key to exit SLOMO.
SLO-MO SPEED PRESET	[SHIFT] + [SLOMO]	For WHEEL ONLY: Press [SHIFT] + [SLOMO] to preset the slo-mo speed. Turn the Wheel to select desired speed. Press [ESC] or any transport key to exit.
STOP	[STOP]	Press once to STILL frame VTR. Press again to put VTR into STOP mode.
TIME MODE SELECT	[TIME MODE]	Press to toggle between Timecode (TC), VITC (VT) or Tape Timer (TM) display modes.
PING-PONG CLIP	[SHIFT] + [LOOP ENABLE]	Press to ping-pong a whole clip or a part between IN and OUT points (if marked).

FUNCTION	KEY PRESS	DESCRIPTION
PLAY	[PLAY]	Plays the clip. If the OUT point is set, stops at the OUT point. If no OUT point is set, plays to the end of the clip.
PLAY TO THE END OF THE CLIP	[SHIFT] + [PLAY]	Plays to the end of the clip. Disregards the OUT point.
ALIGN GANGED CHANNELS	[SHIFT] + [STOP]	Re-establishes the initial offset between ganged channels.
LABEL	[SHIFT] + [CLIP LIST]	Changes keyboard input from Shot Box or PC Keyboard.

## 24. SPECIFICATIONS

### a. ST300

Power:	90 VAC to 265 VAC adapter supplied with IEC connector
Size:	(L" x W" x H") 12" x 6" x 1.5" (front) 3.0" (rear) (T-Bar unit is 12.6" wide)
Weight:	4 lbs.
Rear Panel Connectors:	VTR1, VTR2, VTR3, VTR4 (All DB9F) GPI (DBF15F) Power (DB9M) Aux (DB9F) Reference Video (BNC)
Display:	Easy to read 2-line, back-lit LCD display (User adjustable contrast)
Jog/Shuttle Wheel:	With mechanical detents.
Optional "T"-bar:	Slo-mo 0-200% of Play Speed

### VTR RS422 SERIAL CONNECTOR

#### 9-Pin D-Type, Female

Pin #	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

### POWER CONNECTOR

#### 9-Pin D-Type, Male

Pin #	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	-12 VDC		

### AUX PORT RS422 SERIAL CONNECTOR

#### 9-Pin D-Type, Female

Pin #	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Receive Common	9	Frame Ground
	5	Spare		

## GPI IN/OUT CONNECTOR 15-Pin D-Type, Female (DB15F)

Pin #	Description	Function	Pin #	Description	Function
1	GPI 1 Out		9	GPI 1 In	Play
2	GPI 2 Out		10	GPI 2 In	Stop
3	GPI 3 Out		11	GPI 3 In	Recue
4	GPI 4 Out		12	GPI 4 In	Next Cue
5	GPI 5 Out		13	GPI 5 In	Last Cue
6	GPI 6 Out		14	GPI 6 In	Recall
7	GPI 7 Out		15	GPI 7 In	
8	Ground				

### b. ST420 (SHOTBOX)

Power: +5v DC @ 4A, +12v DC @ 1.0A, -12v DC @ 0.6A  
90 VAC to 265 VAC adapter supplied with IEC connector

Size: [L" x W" x H"] 11.5" x 6.5" x 1.75" (front)  
3.5" (rear)

Weight: 4 lbs.

Rear Panel Connectors: Power: ..... DB9M  
OUTPUT: ... DB9F

## RS422 SERIAL CONNECTOR 9-Pin D-Type, Female

Pin #	1	Frame Ground	6	Transmit Common
	2	Transmit A →	7	Transmit B →
	3	Receive B ←	8	Receive A ←
	4	Receive Common	9	Frame Ground
	5	Spare		

## POWER CONNECTOR 9-Pin D-Type, Male

Pin #	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	-12 VDC		

## 25. TROUBLESHOOTING

### ST420 TROUBLESHOOTING

- a. All keys are RED - no communication with ST300.
- b. All keys are dark - no communication between the ST300 and the Video Server.
- c. The version of the ST420 must comply in the software version with the ST300 it is connected to.

To determine the software version of the ST420 do the following:

- 1) Press **[SHIFT] + [STOP] + [PLAY]**.  
The key that displays the current version is RED.
- 2) The ST420 displays:  
“SELECT ST300 V2.1 or V2.0 or V3.0” (for ST420 version below 4.14).

Press the key for the software version of ST300 being used.  
Please refer to the ST300 to determine the Version if needed.  
**OR** (for ST420 Vs. 4.14 and above):

Select the shotkey that indicates “ST300 V3.X”

- d. Some keys are orange and display text, but when such key is pressed, no clip is loaded. This means that this shotkey has a label associated with it, but does not have a clip learned to it.

To make such key green:

Press **[SHIFT] + [SHOTKEY]** to clear the label.  
**OR**

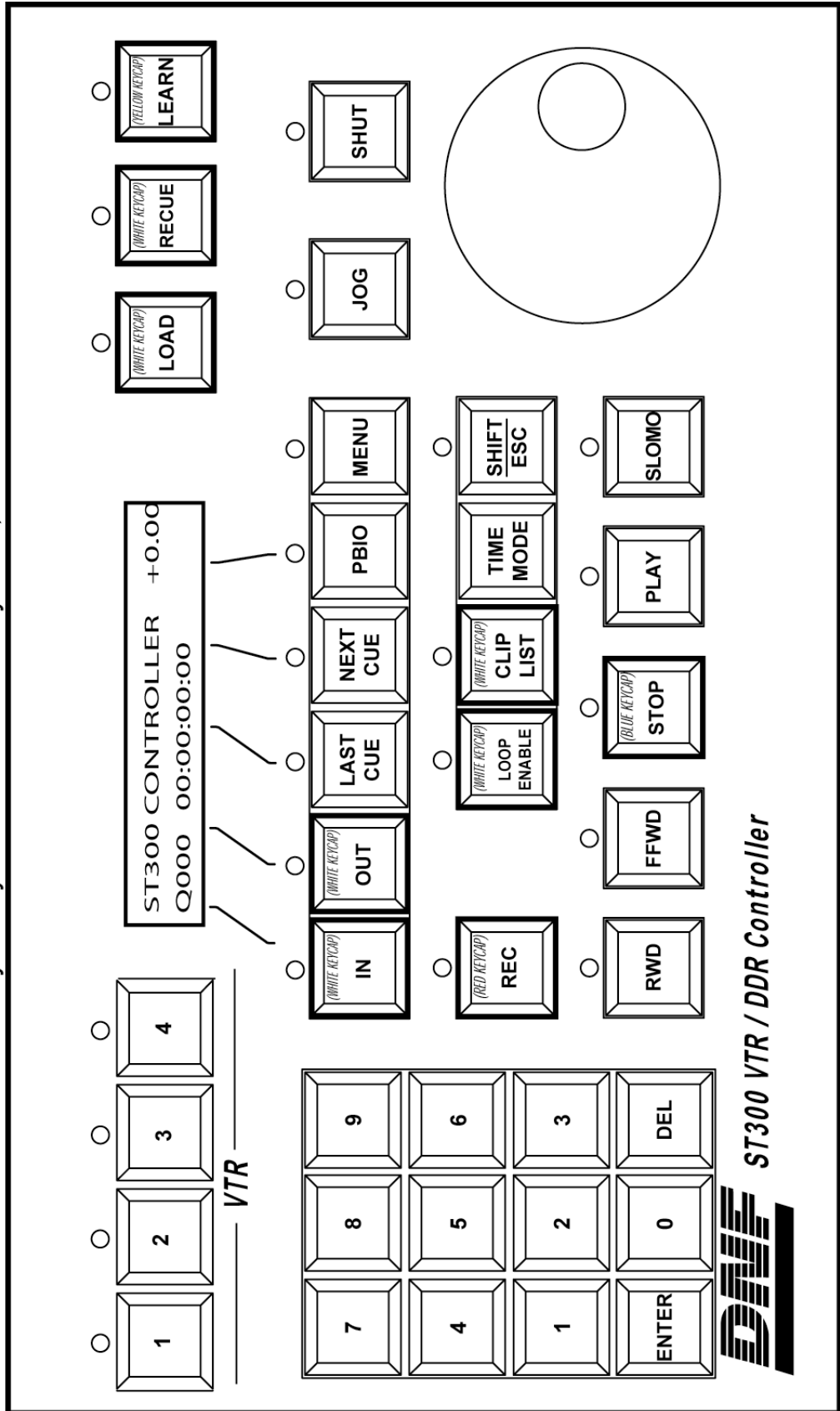
Learn a clip/timecode into the shotkey.

## 26. KEY LAYOUT

### ST300 KEY CONFIGURATION

2034CL-AC & 4000CL-AC V3.1 (-T, -K, -PBIO)

Note: PBIO key is only available on -PBIO systems, otherwise it's blank



## **27. DNF CONTROLS LIMITED WARRANTY**

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls  
12843 Foothill Blvd., Suite D  
Sylmar, CA 91342  
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services at prices listed in the DNF Controls Price List. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

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