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# Model No. 2000CL-O-PBIO (&2000CL-O-T)

## 200 CLIP INSTANT ACCESS SYSTEM

*Odetics Protocol*

WITH PERIPHERAL BUS INTERFACE OPTION

## USER MANUAL

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# **1. REVISION HISTORY**

082103 Rev. 3.2 Company header information revised.

110303 Rev. 3.3 Added DNF Controls Limited Warranty.  
Updated Receive Cue List & Transmit Cue List Function description.

# *Getting Started . . .*

## **2. SYSTEM DESCRIPTION**

- ✓ NOW, production switchers can load & play video clips on Grass Valley Group PROFILE, Leitch VR and other DDRs & Video Servers.
- ✓ Use the EMEM or SNAPSHOT Learn & Recall functions of the production switcher to load and play a video clip from a Recall or timeline.
- ✓ Use the Run and Trigger functions of the production switcher to Play, Stop or Recue the video clip.
- ✓ Instantly load a video clip at the press of a button on Grass Valley Group PROFILE, Leitch VR and other video servers.
- ✓ Instantly load a FILL clip & KEY clip at the press of ONE button, then play out both channels in sync. LOOP up to 3 channels.
- ✓ Control up to 3 video channels individually or ganged.

## **FEATURES**

The 2000CL-O, 200 Clip Instant Access System consists of the ST300-SSM with Clip software and the ST320 SHOTBOX. The ST300 and SHOTBOX share a common, non-volatile Cue Point memory in the ST300.

The 4 banks of 50 switches each, on the SHOTBOX, provide instant access to 200 Clips.

Quickly & Easily learn and re-learn Shotkey assignments on the SHOTBOX.

With this Option, the ST300 has 3 Peripheral Device Addresses, one for each VTR that it controls. This allows the production switcher to control the VTRs connected to the ST300.

Upon receipt of the LEARN command from the production switcher, the ST300 saves the CLIP IDs of the currently loaded clips, the current time of each clip, the VTRs they are loaded on and the current GANG mode, into the appropriate Cue Point.

When the RECALL command is received, the ST300 loads the Learned Clips onto the Learned VTRs, cues the Clip to the Learned time, then restores the Learned GANG mode.

The Trigger function on the production switcher puts the selected VTRs in to Play, Stop, Recue or other available modes.

## DEFINITIONS

- ❑ Throughout this document VTR, DDR, VDR & Video Server will be referred to collectively as “Video Server.”
- ❑ The ST300-S/SM referred to as the “ST300.”
- ❑ The ST320 SHOTBOX is referred to as “SHOTBOX.”
- ❑ SHOTKEY refers to the 1-50 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.

## 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 5 VDC, 1Amp POWER SUPPLY into the POWER connector on the rear of the SHOTBOX. Plug the Power Supply into an outlet, 90 VAC – 240 VAC.

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

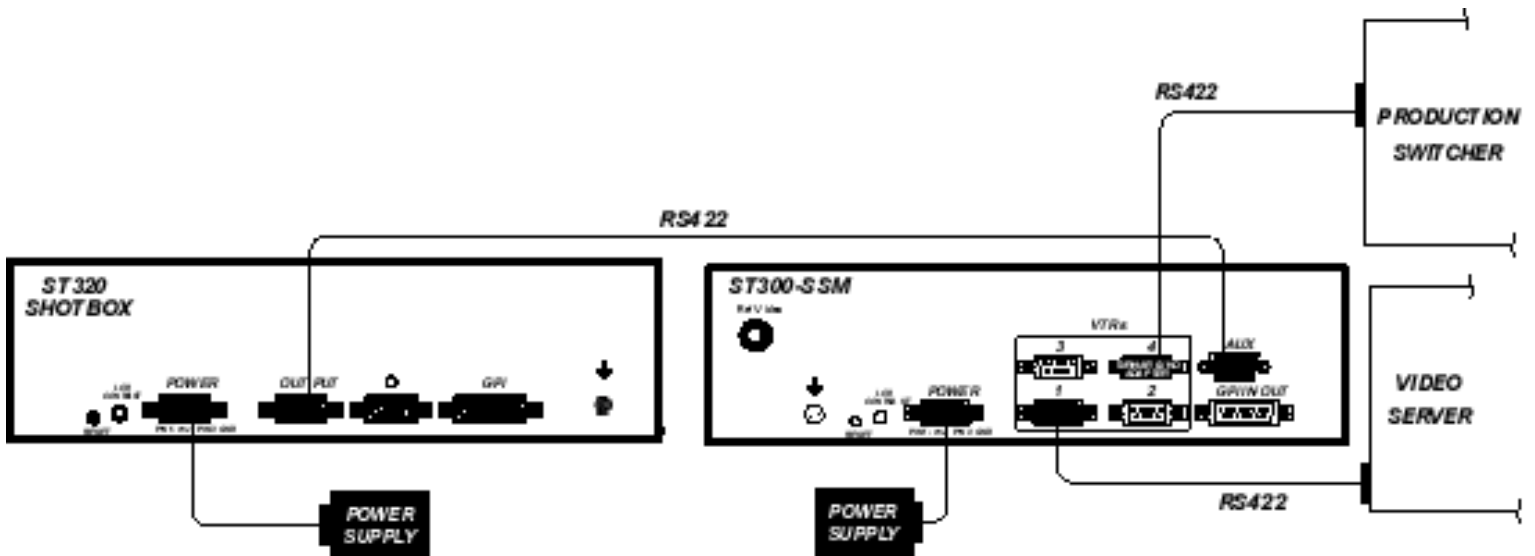
- 1) Plug one end of a 9-conductor, RS422 serial cable into the VTR 1 (2 or 3) connector on the rear of the ST300. Plug the other end of the cable into the 9-pin REMOTE connector on the Video Server.
- 2) Connect the +5, +12, -12 VDC POWER SUPPLY into the POWER connector on the rear of the ST300. Plug 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.

### c. PRODUCTION SWITCHER

- 1) Connect a standard cable (RS422, 9-pin serial cable) to the supplied turnaround adapter. Plug the turnaround adapter into the “VTR4” connector on the rear of the ST300. Connect the other end of the cable to the Peripheral Bus Connector on the production switcher. (Communication Format- 38.4K, N, 8,1)
- 2) The ST300 has 3 Peripheral Device Addresses, one for each VTR that it controls. To set the Device Address for each VTR:
- 3) Press [MENU] on the ST300.
- 4) Turn the Wheel clockwise until “Peripheral Address” is displayed.
- 5) Press VTR[1], VTR[2] or VTR[3] to select a VTR.

Installation is complete.

## CONNECTION DIAGRAM



## 4. VIDEO SERVER SETUP

- a. Select ODETICS Broadcast communications protocol on the VIDEO SERVER to be controlled.
- b. Assign a serial port on the VIDEO SERVER through which the ST300 will control it.

### NOTES:

The VIDEO SERVER may not support LTC or VITC time modes in ODETICS Broadcast mode.

The ST300 will default to Tape Time if a non-supported time mode is selected.

The Grass Valley Group PROFILE does **not** support search to a time location using Timecode (LTC or VITC) in ODETICS Protocol. Tape Time mode (TM) must be selected on the ST300.

In Odetics Broadcast mode, the VIDEO SERVER may **only** allow Full Record. INSERT and ASSEMBLE record modes may be disabled.

Setup is complete.

## 5. LOADING A CLIP

- a. Press [**CLIP LIST**] to view the list of CLIP IDs that are resident on the Video Server. The display will show “CREATE NEW CLIP.” The CLIP LIST indicator will turn on.
- b. Press [**LOAD**] to create a new clip.  
**OR**  
Turn the Wheel to view CLIP IDs.  
  
Turn the Wheel clockwise to scroll forward, or counter-clockwise to scroll backward through the list of available CLIPS.
- c. Press [**LOAD**] to load the current CLIP ID shown on the top line of the display. After loading the selected clip, the CLIP LIST function will terminate. The CLIP LIST indicator will turn off.
- d. CLIP IDs can be manually entered from the ST300 numeric keypad **OR** the SHOTBOX “qwerty” keyboard:  
Enter an ID (maximum of 8 characters); press [**ENTER**].  
**OR**
- e. Press [**LOAD**] to load the entered CLIP ID and NOT save it in the SHOTLIST.

## 6. LOOPING A CLIP

- a. LOAD a clip from CLIP LIST or RECALL the clip from the Cuelist. (Refer to appropriate section for more information.)
- b. Press [**LOOP ENABLE**]. The LOOP ENABLE indicator will turn on.
- c. Press [**PLAY**] to loop a loaded clip. The second line of the display will show “Looping clip . . .”
- c. Press [**STOP**] to stop the loop play.  
**NOTE:** Pressing other keys while the clip is looping will have **NO** effect. Only [**STOP**] is recognized in this mode.  
**OR**  
Press [**SHIFT**] + [**PLAY**]. The clip will be reloaded and start playing in a Loop.

**NOTE:** The LOOP function can be performed on a SINGLE CHANNEL ONLY. Loop will automatically be disabled if the Channel becomes part of a gang.

## 7. LEARN

- a. Select a VTR by pressing VTR [1], VTR [2] or VTR [3].
- b. Load the desired clip using the CLIP LIST function.
- c. Repeat steps a and b until clips are loaded into the desired VTRs.
- d. Set the GANG mode, if required. (Refer to the Function Table for Details.)

## 8. LEARN ON THE ST300

- 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. Press [SHIFT] + [MARK] to initiate the LEARN.  
The display will show:

Press VTR: MARK-Lrn      ESC-Cancel
--

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

## 9. LEARN ON THE SHOTBOX

- a. Press [LEARN]. The LEARN indicator will turn on.

- b. The display will show the prompt:

Select Bank & Switch STOP- Abort
-------------------------------------

- c. Select the desired BANK and ShotKey.
- d. The SHOTBOX will: LEARN (save) the loaded clip(s), current time and gang configuration of the active VTR(s).
- e. Press [STOP] to exit at any time.

## **10. LEARN ON THE PRODUCTION SWITCHER**

- a. Select and enable the Peripheral Device Addresses for the ST300.
- b. Do a LEARN to the desired REGISTER.  
The ST300 will: LEARN (save) the VTR#, loaded CLIP ID and current IN time into the REGISTER number on the ST300.

## **11. RECALL ON THE ST300**

- 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. Press [LOAD] on the ST300.  
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.

## **12. RECALL ON THE SHOTBOX**

Select the desired Cue Point by pressing the bank and the switch key.

## **13. RECALL ON THE PRODUCTION SWITCHER**

RECALL the desired REGISTER NUMBER.  
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.

## 14. TRIGGER

The operator fires a trigger using either the Timeline or Run function on the production switcher. The ST300 puts the Video Server into these modes based on the trigger value:

### GRASS VALLEY GROUP

<u>Trigger Value</u>	<u>Mode</u>
0	Play
1	Recue to beginning of clip
2	Slo-mo using ST300 Preset Speed
3	Reverse Play
4	Still Frame
5	Play
6	Record
7	Loop
8 or greater	Play

### SONY

<u>Trigger Value</u>	<u>Mode</u>
0	Recue to beginning of clipPlay
1	Play
2	Slo-mo using ST300 Preset Speed
3	Reverse Play
4	Still Frame
5	Play
6	Record
7	Loop
8 or greater	Play

To control more than one VTR, enable the Peripheral Device Address for the required VTRs. The Trigger will be sent to the enabled devices.

#### **OR**

GANG the required VTRs on the ST300. See the Menu Table for GANG instructions. Enable the Peripheral Device Address for one of the GANGed VTRs. The Trigger will be sent to the enabled VTR. The other VTRs in the GANG will perform the same action.

## *Advanced Features . . .*

### **15. RECORDING A CLIP**

- a. Press [**CLIP LIST**]. The CLIP LIST indicator will turn on. The display will show “CREATE NEW CLIP.”
- b. Press [**LOAD**]. The display will show the default CLIP ID.
- c. Press [**LOAD**] to accept the default CLIP ID.  
**OR**

Enter a name with a maximum of 8 characters on the SHOTBOX keyboard.

- d. Press [**LOAD**] to create the selected CLIP ID. (If the selected CLIP ID already exists, a warning message will be displayed. To load the existing clip, press [**ENTER**]. Press [**ESC**] to exit without loading the existing clip.)

### **16. CAPTURE**

The CAPTURE function allows source material from a VTR to be recorded into the Video Server. A CLIP ID is also created.

VTR1 is always the Recorder (the Video Server).

Select VTR [2] or VTR [3] as the source VTR. Any RS422, SONY protocol compatible VTR can be used. Each source VTR has its own set of IN and OUT points. Use the transport function keys to control the source VTR.

#### **a. SETTING AN IN (OUT) POINT**

- 1) Locate the clip to the desired IN (OUT) time.
- 2) Press [**IN**] ([**OUT**]).  
The IN (OUT) indicator comes on.  
**OR**

Press [**SHIFT**] + [**IN**] ([**OUT**]) to manually enter a new IN (OUT) time.

#### **b. VIEW THE IN (OUT) POINT**

- 1) When the IN (OUT) indicator is on,  
Press [**IN**] ([**OUT**]) to view the existing IN (OUT) Point.
- 2) While viewing the IN (OUT) Point:  
Press [**MARK**] to overwrite the saved time with the current time.

Press [**RECUE**] to search to the IN (OUT) point.

**c. CLEARING AN IN (OUT) POINT**

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

**d. ENTER PREROLL VALUE**

- 1) Press **[MENU]**. The MENU indicator will turn on.
- 2) Turn the Wheel until “Enter PREROLL:” is shown on the display.
- 3) Enter the desired preroll value using the ST300’s numeric keypad.
- 4) Press **[ENTER]** to save the entered value OR **[ESC]** to exit without saving.

**e. EXECUTE CAPTURE FUNCTION**

- 1) Press **VTR[2]** or **VTR[3]** to select the source VTR.
- 2) Press **[SHIFT] + [RECORD]**. The display will prompt you for a CLIP ID. A default CLIP ID will be shown.
- 3) Press **[LOAD]** to accept the default CLIP ID.  
**OR**

Use **[NEXT CUE]**, **[LAST CUE]** and Wheel to edit the CLIP ID.

Use the **[NEXT CUE]** and **[LAST CUE]** keys to position the cursor.  
Turn the Wheel to select the desired letter.

- 4) Press **[LOAD]** to accept the CLIP ID.

The ST300 will create the new CLIP ID on the Video Server.

The Source VTR will preroll to the IN Point, then play.

At the Source VTR’s IN point, the RECORDER will go into record.

At the Source VTR’s OUT point, the RECORDER will terminate record,  
post-roll for 2 seconds, then stop.

The Source VTR will search to the OUT point and stop. The OUT point will be cleared.

The IN indicator will stay on. The OUT indicator will turn off.

## 17. TRANSFERRING CUELIST

### 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 the 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] and scroll the Wheel until “Transmit CUE List? YES=Enter, Exit=ESC” is displayed.
- c) Press [ENTER] to start transmitting.  
The Display shows “Waiting to transmit” on the first line.
- d) When the Receiver is ready, transfer starts automatically.  
The Display now shows “Transmitting cuelist.”
- e) After the transfer is over, the display shows “Transfer is over” for one second and then shows “Waiting to transmit” again.
- f) Connect another ST300 to transmit the list again.

**OR**

Press [ESC] twice to exit the MENU mode.

#### 2) To Transmit Cue Points to the 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-f of the TRANSMIT CUE POINTS to the ST300 section.

## **b. RECEIVE CUELIST FUNCTION**

The RECEIVE CUELIST function allows you to receive your 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 the 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**] and scroll the Wheel until “Receive CUE List? YES=Enter, Exit=ESC” is displayed.
- c) Press [**ENTER**] to start receiving.  
The Display shows “Waiting to receive” on the first line.
- d) When the Transmitter is ready, transfer starts automatically.  
The Display now shows “Receiving cuelist.”
- e) After the transfer is over the display shows “Done-Success! Press any key...”
- f) Press any key. The display shows “Receive cuelist?” message.
- g) Press [**ESC**] to exit the MENU mode.

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

Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using RS422 to RS232 adapter.

Repeat steps a-g of the RECEIVE CUE POINTS from the ST300 section.

## Reference . . .

### 18. VIEW CONTENTS OF CUE POINTS ON THE SHOTBOX

- a. Press and hold [VIEW].
- b. Select a Cue Point by pressing desired bank and switch keys.  
The display will show:

VT1	xxxxxxx
VT2	yyyyyyy

Where

xxxxxxx- is the CLIP ID assigned to the selected Cue Point on VTR1

yyyyyyy- is the CLIP ID assigned to the selected Cue Point on VTR2

- c. Press the selected switch again to see which clips are assigned to this Cue Point on VTR3.

### 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.  
The CONTROL Switch indicators show the real-time status of the Video Server.

### 20. SHOTBOX DISPLAY

If current active VTR on the ST300 is VTR1 or VTR2, the Shotbox display shows:

V:1	L:	xxxxxxx
V:2	L:	yyyyyyy

Where xxxxxxx- clip, loaded on VTR1

Where yyyyyyy- clip, loaded on VTR2

If current VTR is VTR3, the display shows clips loaded on VTR3.

### 21. SHOTBOX SHOTKEY MAPPING TO SHOTLIST LOCATIONS

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

BANK 1, SWITCHES 1 → 50 access SHOTLIST locations 101 → 150.

BANK 2, SWITCHES 1 → 50 access SHOTLIST locations 201 → 250.

BANK 3, SWITCHES 1 → 50 access SHOTLIST locations 301 → 350.

BANK 4, SWITCHES 1 → 50 access SHOTLIST locations 401 → 450.

## 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 MODE</u>	<u>(Turning Wheel Clockwise)</u>												
<b>RECORD</b>	<p>Press [MENU] to select the desired record mode: Lockout, Assemble, Crash (Full) or Insert.</p> <p><u>Only</u> in INSERT mode: Press the associated Softkey, located below the display, to toggle Video(V), Audio1(A1), Audio2(A2), Audio3(A3), on/off.</p>												
<b>WIND MODE</b>	<p>Press Softkey to select: HOLD (fast wind is maintained only while key is depressed). <b>OR</b> LATCH (fast wind is initiated and maintained with momentary key press).</p> <p>Select fast wind speed (3.9 to 23.7) by pressing Softkey below SPD.</p>												
<b>SLOMO</b>	<table border="1" style="width: 100%;"> <tr> <td>ST300 display shows (Non T-Bar version):</td> <td style="text-align: center;"> <table border="1"> <tr> <td>SLOMO with:</td> <td>WHEEL</td> </tr> <tr> <td><b>SpdRange</b></td> <td><b>Preset</b></td> </tr> </table> </td> </tr> <tr> <td>ST300 display shows (T-Bar version):</td> <td style="text-align: center;"> <table border="1"> <tr> <td>SLOMO with:</td> <td>TBAR</td> </tr> <tr> <td><b>Wheel SpdRange Preset</b></td> <td></td> </tr> </table> </td> </tr> </table> <p>Press Softkey [TBAR] (or [WHEEL]) to toggle between them.</p> <p><b>NOTE</b> - The T-BAR has a speed range of 0 → +200 with a detent at +100% play speed <b>OR</b> a range of 0 → +100 (detent at +100% play speed).</p> <p><b>For Wheel only:</b> Press Softkey [SPDRANGE] to select SLOMO speed ranges: Press Softkey to select: 0 → +200 <b>OR</b> - 100 → +200.</p> <p>Press Softkey [BACK] 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></p>	ST300 display shows (Non T-Bar version):	<table border="1"> <tr> <td>SLOMO with:</td> <td>WHEEL</td> </tr> <tr> <td><b>SpdRange</b></td> <td><b>Preset</b></td> </tr> </table>	SLOMO with:	WHEEL	<b>SpdRange</b>	<b>Preset</b>	ST300 display shows (T-Bar version):	<table border="1"> <tr> <td>SLOMO with:</td> <td>TBAR</td> </tr> <tr> <td><b>Wheel SpdRange Preset</b></td> <td></td> </tr> </table>	SLOMO with:	TBAR	<b>Wheel SpdRange Preset</b>	
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<b>Wheel SpdRange Preset</b>													

	<p>Press Softkey [<b>PRSET</b>] to select the SLOMO Preset Speed Mode.</p> <p>Press Softkey [<b>UPDATE</b>]. When exiting SLOMO mode, the last used speed is saved in the Preset Speed register.</p> <p>Press Softkey [<b>STATIC</b>]. The Preset Speed register is NOT updated when exiting SLOMO mode. It is only changed by [<b>SHIFT</b>] + [<b>SLOMO</b>] (PRESET SLOMO).</p>
<b>ST300 SETUP</b>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>ST300 SETUP</p> <p>Clear Cues                      SetDefault</p> </div> <p>Press Softkey beneath ClearCues to clear all Cue Points to 00:00:00:00. Press Softkey [<b>YES</b>] when asked “Are You Sure?”</p> <p>Press Softkey beneath SetDefault to set ST300 to default settings. Press Softkey [<b>YES</b>] when asked “Are You Sure?”</p> <p><b>IMPORTANT NOTE:</b> Please set these items during initial installation.</p>
<b>DISPLAY SOFTWARE VERSION</b>	The version number for the currently installed software is displayed.
<b>RECORD</b>	Press Softkey to select single button or 2-button record. RECORD = [ <b>REC</b> ] Only <b>OR</b> [ <b>REC</b> ] + [ <b>PLAY</b> ]
<b>RECALL MODE</b>	Press Normal or Redirect (Redir). When one and only one clip is learned into a Cue Point the Clip will be REDIRECTED to load on the currently selected VTR if REDIR is On.  If REDIR is off, the Clip will be loaded on the VTR it is LEARNED into.
<b>PBIO ADDRESS</b>	Press VTR key to assign PBIO address.
<b>SWITCHER TYPE</b>	Select your switcher type. GVG = Grass Valley Group (default) or Sony. For Philips DD35 with PBus, use GVG.
<b>PARITY</b>	Select Parity type Switcher is putting out on the PBUS: ODD, EVEN or NONE
<b>PREROLL</b>	Enter Preroll value.
<b>TRANSMIT CUELIST</b>	Transmits Cuelist to another ST300 or to a PC.
<b>RECEIVE CUELIST</b>	Receives Cuelist from another ST300 or a PC.

## 22. FUNCTION TABLE

Function	Key Press	Description
GOTO ENTERED TIME	[SHIFT] + [RECUE]	Search the VTR to the manually entered time.  Use the ST300 numeric keypad. Press [ENTER] or [RECUE].  NOTE: GRASS VALLEY GROUP Profile does <b>not</b> support TC or VITC time search.
GANG	[SHIFT] + [VTR #1] OR [SHIFT] + [VTR #2] OR [SHIFT] + [VTR #3]	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.
FFWD	[FFWD]	Press and HOLD to shuttle. 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.
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 shuttle. 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 <b>OR</b> press any transport key to exit SLOMO.
SLO-MO SPEED PRESET	[SHIFT] + [SLOMO]	For WHEEL <b>ONLY</b> : Press [SHIFT] + [SLOMO] to preset the slo-mo speed. Turn 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.
LOOP	[SHIFT] + [PLAY]	Plays the currently loaded clip in a continuous loop.
TIME MODE SELECT	[TIME MODE]	Press to toggle between Timecode (TC), VITC (VT) or Tape Timer (TM) display modes.

## 23. 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)
Weight:	4 lbs.
Rear Panel Connectors:	VTR1, VTR2, VTR3, VTR4 ..... All DB9F GPI ..... DBF15F Power ..... DB9M Aux ..... DB9F
Display:	Easy to read 2-line, back-lit LCD display (User adjustable contrast)
Jog/Shuttle Wheel:	With mechanical detents

### RS422 SERIAL CONNECTOR

#### 9-Pin D-Type, Female (DB9F)

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, Female (DB9M)

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

### GPI IN/OUT CONNECTOR

#### 15-Pin D-Type, Female (DB15F)

Pin #	1	GPI 1 Out	Pin#	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. ST320 (SHOTBOX)**

Power: 90 VAC to 265 VAC adapter supplied with IEC connector

Size: (L" x W" x H") 10.5" x 7.25" x 1.75" (front) 3.0" (rear)

Weight: 4 lbs.

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

Display: Easy to read 2-line, back-lit LCD display  
(User adjustable contrast)

**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	No Connection
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	No Connection	9	Ground
	5	No Connection		

## **24. 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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