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Model 4000CL-O 400 CLIP FAST ACCESS SYSTEM

WITH

ODETICS PROTOCOL

VERSION 3.0 SOFTWARE

USER MANUAL

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1. REVISION HISTORY

100903	Rev. 2.6	Company header information revised.
112403	Rev. 2.7	Updated Transmit Cue List Function and Receive Cue List Function description. Added DNF Controls Limited Warranty.
080604	Rev. 2.8	Changed T-bar dimension.

Getting Started . . .

2. SYSTEM DESCRIPTION

The 4000CL-O system includes DNF's most popular controller, the ST300, with Cliplist software. The ST300 controls up to 4 video channels individually or ganged. It features full transport functionality.

The 4000CL-O provides fast access to fill clip and key clip combinations with the press of one key.

The 4000CL-O supports Odetics Broadcast protocol and requires that the Video Server be controllable under Odetics Broadcast Protocol.

The 4000CL-O provides fast access to existing video clips stored in the Grass Valley Group PROFILE, the Leitch VR, and other Video Servers supporting Odetics Broadcast Protocol.

DEFINITIONS:

- Throughout this document, VTR, DDR, VDR & Video Server will be referred to collectively as "Video Server."
- The ST300-S/SM is referred to as "ST300."
- Words surrounded by brackets, for example [ENTER], are keys on the ST300. [XXX] + [XXX] means hold the two keys down simultaneously. XXX = Key name.

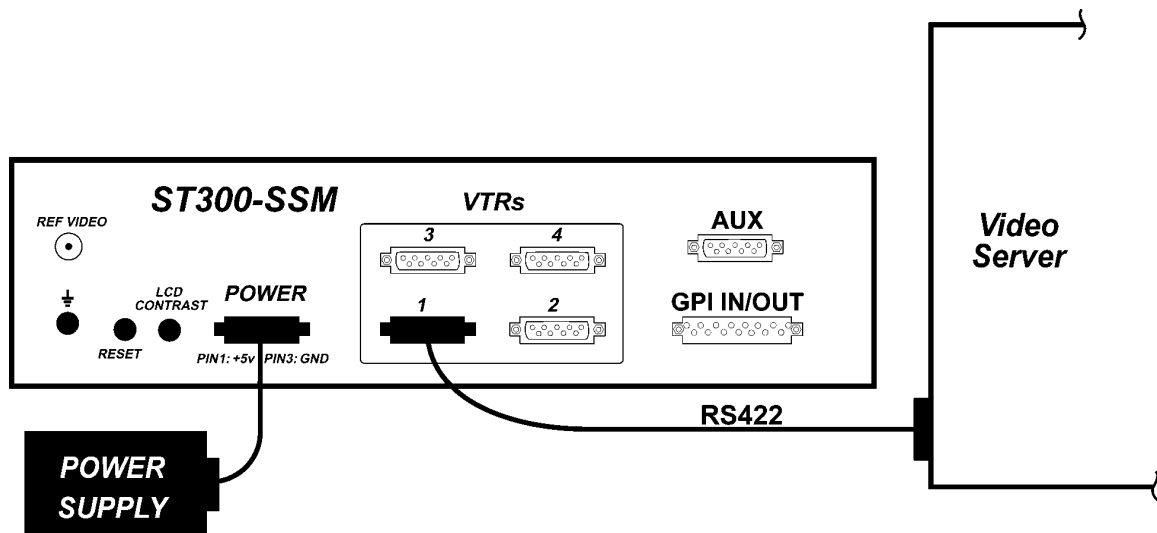
3. SYSTEM INSTALLATION

ST300-S/SM, VTR/DDR CONTROLLER

- a. 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.
- b. 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.
- c. 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

- 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 the server.

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 on the ST300.

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. LOAD A CLIP

- a. Select a VTR by pressing VTR [1], VTR [2], VTR [3], or VTR [4].
- b. Press [CLIP LIST] to view the list of CLIP IDs that are resident on the Video Server. The CLIP LIST indicator will turn on.
- c. Turn the Wheel to view the existing CLIP IDs on the video server.

Turn the Wheel clockwise to scroll forward, or counter-clockwise to scroll backward, through the list of available CLIPs. Backward scrolling is limited to the last 10 CLIP IDs viewed.

OR

Manually enter a CLIP ID using the ST300 numeric keypad, or PC keyboard (if KBIO option).

- d. Press [LOAD] to load the selected CLIP ID for playout.
- e. Repeat steps a. thru d. to load clips on desired VTRs.
- f. Set the GANG mode, if required.

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. Load a clip on the desired VTRs (See Section 4, “LOAD A CLIP”).
- b. 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.
- c. 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 “Mark-Lrn, ESC-cancel.”
- d. Press VTR [1], [2], [3] or [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 be learned automatically.
- e. 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), loaded CLIP ID and current IN time to the selected Cue Point.

8. RECALL A CLIP OR CLIP COMBINATION

- 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.

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. LOOP CLIP

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

Press [**SHIFT**] + [**PLAY**]. The clip will be reloaded and start playing in a Loop.

- c. Press [**STOP**] to stop the loop play. **NOTE:** The ST300 will **NOT** respond to any other keys while a clip is looping. Only [**STOP**] is recognized in this mode.

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

If the clip ID ends with an asterisk (“*”), it will automatically loop when either [**LOOP ENABLE**] or [**PLAY**] is pressed.

Advanced Features . . .

11. CREATE A CLIP

- a. Press [**CLIP LIST**]. The CLIP LIST indicator turns 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

Use [**NEXT CUE**], [**LAST CUE**] and Wheel to create a CLIP ID. Use the [**NEXT CUE**] and [**LAST CUE**] keys to position the cursor. Turn the Wheel to select the desired letter.

OR

Create an ID using the numeric keypad, with a maximum of eight characters. Press [**ENTER**].

- 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.

12. CAPTURE FUNCTION

The CAPTURE function allows source material from a VTR to be easily and quickly recorded into the VIDEO SERVER. A CLIP ID is also created.

VTR1 is always the Recorder (the VIDEO SERVER).

Select VTR [2], VTR [3] or VTR [4] as the source VTR. Any RS422, SONY protocol compatible VTR can be used.

Use the transport function keys to control the source VTR. Each source VTR has its own set of IN and OUT points.

a. SETTING 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.”

OR

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

- 3) Press [**ENTER**] to save the entered time or press [**ESC**] to exit without saving.

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 turns off.

d. ENTER PREROLL VALUE

- 1) Press **[MENU]** and turn the Wheel to “Enter PREROLL:”
- 2) Enter the desired preroll value using the ST300’s numeric keypad.
- 3) Press **[ENTER]** to save the entered value **OR** **[ESC]** to exit without saving.

e. EXECUTE CAPTURE FUNCTION

- 1) Press **VTR[2]**, **VTR[3]**, or **VTR [4]** 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.

OR

Manually enter a numeric ID using the numeric key pad.

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.

13. 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 11.a.1).

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 6.b.1).

Reference . . .

14. 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>												
RECORD	Press Softkey to select the desired record mode: Assemble, Insert, Lockout or Crash (Full).												
WIND MODE	Press Softkey to select: HOLD (fast wind is maintained only while key is depressed). OR LATCH (fast wind is initiated and maintained with momentary key press). Select fast wind speed (03.9X, etc.) by pressing Softkey.												
SLOMO	<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 style="text-align: right;">WHEEL</td> </tr> <tr> <td>SpdRange</td> <td style="text-align: right;">Preset</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 style="text-align: right;">TBAR</td> </tr> <tr> <td>Wheel SpdRange</td> <td style="text-align: right;">Preset</td> </tr> </table> </td> </tr> </table> <p>Press Softkey [TBAR] (or [WHEEL]) to toggle between T-BAR and WHEEL.</p> <p>NOTE - The T-BAR has a fixed speed range of 0→+200 with a detent at +100% play speed.</p> <p>For Wheel only: Press Softkey [SPDRANGE] to select SLOMO speed ranges:</p> <p>Press Softkey to select 0 → +200 OR -100 → +200. Press Softkey [BACK] to return to SLOMO MENU.</p> <p>Press [ESC] to exit SETUP MENU OR turn the Wheel to select another item.</p> <p>(Continued on next page.)</p>	ST300 display shows (Non T-Bar version):	<table border="1"> <tr> <td>SLOMO with:</td> <td style="text-align: right;">WHEEL</td> </tr> <tr> <td>SpdRange</td> <td style="text-align: right;">Preset</td> </tr> </table>	SLOMO with:	WHEEL	SpdRange	Preset	ST300 display shows (T-Bar version):	<table border="1"> <tr> <td>SLOMO with:</td> <td style="text-align: right;">TBAR</td> </tr> <tr> <td>Wheel SpdRange</td> <td style="text-align: right;">Preset</td> </tr> </table>	SLOMO with:	TBAR	Wheel SpdRange	Preset
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Wheel SpdRange	Preset												

15. 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]. NOTE: GRASS VALLEY GROUP Profile does not support TC or VITC time search.
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.
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	[SHIFT] + [PLAY]	Play the currently loaded clip 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.

16. SPECIFICATIONS

ST300

Power:	90 VAC to 265VAC 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" long)		
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		

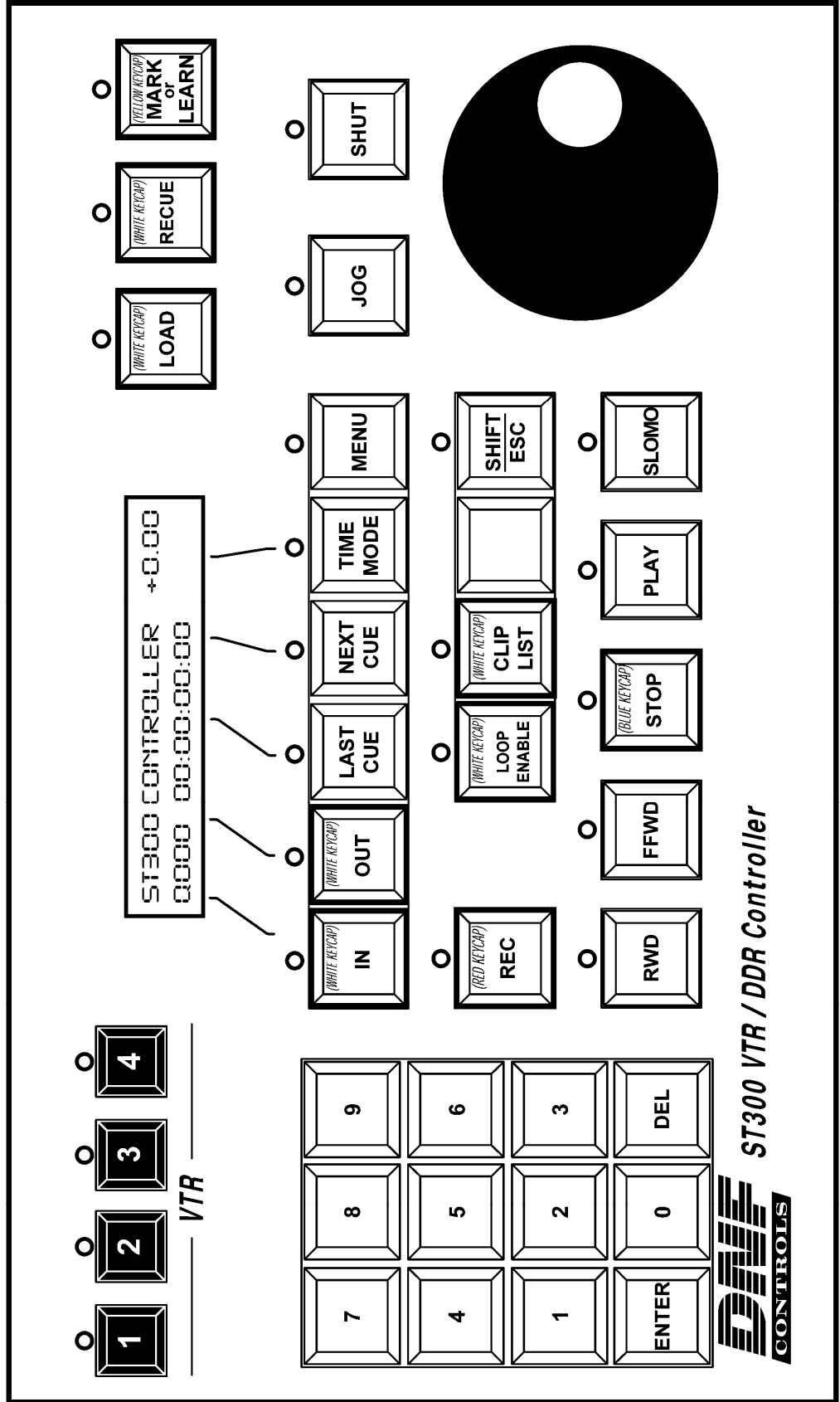
GPI IN/OUT CONNECTOR

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				

17. KEY LAYOUT

ST300 KEY CONFIGURATION 2034CL-O, 4000CL-O V3.0 (& -T, & -PBIO)



18. 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 C
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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