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Model 240VS-S

192 Video Segment Instant Access System

for *Sony* Protocol

USER MANUAL

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1. REVISION HISTORY

070902	Rev. 3.0	Added Section 6. LEARN
100703	Rev. 3.1	Company header information revised.
012904	Rev. 3.2	Added Transfer Cue List section. Added DNF Controls Limited Warranty.

Getting Started . . .

2. SYSTEM DESCRIPTION

The 2400VS-S System consists of an ST300 with Video Segment software and an ST320 SHOTBOX.

TBAR or detented Wheel for Fast and Easy slomo-ing:
0-200% or -100% to + 200% of Play speed.

Quickly, easily store & recall 192 Cue Points. All Cue Points are retained when power is off.

The SEGMENT PLAYBACK option for the ST300 in combination with a DDR or VTR provides a Quick and Easy way to access and play up to 192 video segments.

Each ST300 Cue Point consists of an IN point and an OUT point. IN/OUT points can be manually entered **OR** marked with the current “tape” time from the Video Server.

FEATURES

- ❑ Fast and Easy to search to a Cue Point, manually entered Timecode number or Record out Point.
- ❑ Set Preroll duration form one frame to one hour.
- ❑ Freeze on Last Good video (Record out Point).

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 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

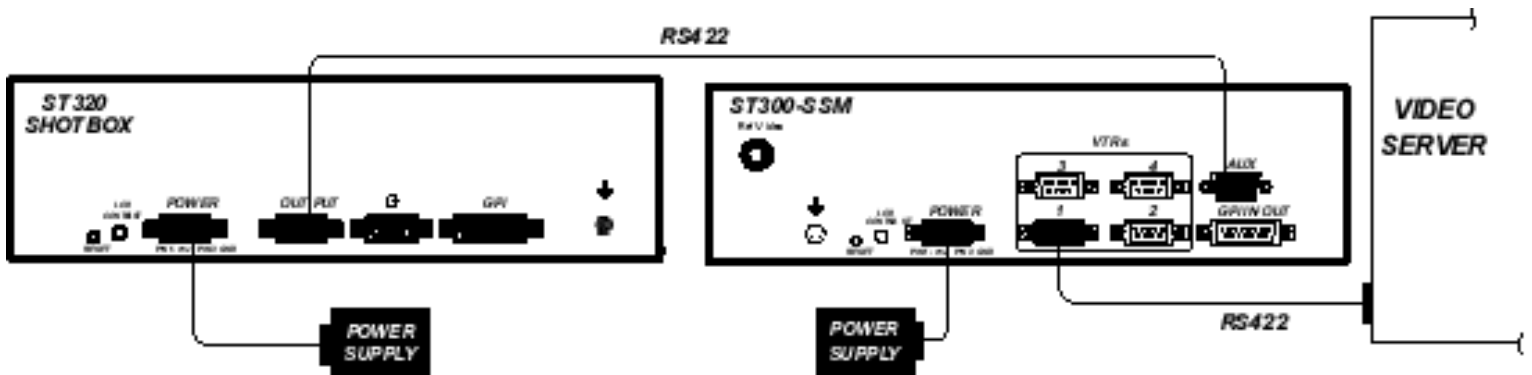
a. SHOTBOX

- 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, 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 +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.
- 4) Select REMOTE mode on the Video Server 's front panel.

CONNECTION DIAGRAM



4. OPERATION

LCD DISPLAY

During normal operation, the top row of the display shows the selected time mode and current time location of the VTR.

For example: TM 01:12:09:23

Time Modes: TM = Tape Timer, TC = LTC, VT = VITC

The currently selected SLO-MO speed is displayed on the far right side of the top row.

The bottom row of the display shows the current Cue Point number and its contents.

5. ST300

Select the desired transport function by pressing the appropriate switch on the SLOW MOTION CONTROLLER.

The Real-Time Status Indicators will light to indicate the current tape transport mode.

For example - Pressing [PLAY] will put the VTR into the PLAY mode. The PLAY Status Indicator will turn on when the VTR is in PLAY mode.

a. SELECT A SEGMENT (CUE)

The current segment number and its contents are shown on the bottom line of the display.

The IN and OUT indicators show whether the IN time or OUT time is being displayed on the bottom line of the display.

Press [NEXT CUE] or [LAST CUE] to step through the list of segments, one at a time.

b. ENTER AN IN (OUT) POINT

Press [IN] ([OUT]) to mark the current "tape" time into the IN (OUT) Point.

Press [SHIFT] + [IN] ([OUT]) to manually enter an IN (OUT) Point.
Enter the desired time using the numeric keypad.

Press [ENTER] to save the entered number.
OR

Press [ESC] to exit without saving.

c. VIEW THE IN (OUT) POINT

View the current IN (OUT) point by pressing [IN] ([OUT]), if the IN (OUT) indicator is on.

d. DELETE IN (OUT)

Press [DEL] + [IN] ([OUT]).

e. **PLAY A SEGMENT**

Select a video segment by pressing [LAST CUE] or [NEXT CUE].
OR

By entering the desired cue number using the numeric keyboard.

Press [GOTO] to cue up to the IN point.

Press and hold [SHIFT], then press and release [PLAY].

6. **LEARN**

- ❑ Select a VTR by pressing VTR [1], VTR [2], VTR [3] or VTR [4].
- ❑ Mark or enter IN and OUT points on the selected VTR.
- ❑ Repeat first two steps until IN and OUT are marked on the desired VTRs.

a. **LEARN ON THE ST300**

- 1) Select the desired Cue Point by pressing [NEXT CUE], [LAST CUE].
OR

By manually entering the Cue Point using.

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

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

b. **LEARN ON THE SHOTBOX**

- 1) Press [LEARN]. The LEARN indicator will turn on.
- 2) Select the desired BANK and ShotKey.
- 3) Press [LEARN] to exit at anytime.

NOTE: The [LEARN] key toggles LEARN mode on/off.

7. RECALL

a. RECALL ON THE ST300

- 1) 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.

- 2) Press [LOAD] on the ST300.

The ST300 will automatically cue learned VTR to the IN point, then set the Learned GANG mode.

b. RECALL ON THE SHOTBOX

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

8. SHOTBOX

a. DISPLAY

For Example:

1. IN 01:00:00:00 OUT 01:00:01:00

b. SHOTBOX BANK AND SWITCH INDICATORS

The BANK key indicators show the currently selected bank.

The SWITCH key indicator shows the last selected or viewed Cue Point.

Only one BANK and SWITCH indicator are on at a time. Sometimes one BANK indicator will be on and all the SWITCH indicators will be off.

The BANK and SWITCH indicators that are currently on show the location of the selected Cue Point.

OR

The location of the last viewed Cue Point.

c. SHOTBOX CONTROL SWITCHES

These keys control the VTR selected by the ST300.

Pressing [PLAY] puts the VTR into PLAY Segment mode.

Pressing [STOP] puts the VTR into STOP mode.

Pressing [RECUE] stops the VTR and cues back to the IN Point.

The CONTROL Switch indicators show the real-time status of the VTR.

d. SHOTBOX SWITCH MAPPING TO CUE POINT LOCATIONS

The SWITCHES on the SHOTBOX access the ST300's Cue Point locations as follows:

BANK 1, SWITCHES 1 → 48 access Cue Point locations 101 → 148.
BANK 2, SWITCHES 1 → 48 access Cue Point locations 201 → 248.
BANK 3, SWITCHES 1 → 48 access Cue Point locations 301 → 348.
BANK 4, SWITCHES 1 → 48 access Cue Point locations 401 → 448.

9. VIEW CUE POINTS

Press and hold [VIEW].

Select the desired BANK 1, 2, 3 or 4. The indicator on the selected bank will turn on.

Press the desired SWITCH.

The contents of the Cue Point IN and OUT Points assigned to this BANK and SWITCH will be shown on the display.

The indicator on the pressed SWITCH will turn on.

For example:

IN: 00:00:01:00
OUT: 00:00:02:00

If no time is assigned to the switch, the “ NO ASSIGNMENT” message will be displayed.

Release [VIEW] when done.

10. TRANSFERRING CUELIST

The TRANSMIT CUELIST 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.

a. TRANSMIT CUE LIST FUNCTION

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 to “Transmit CUE List?
YES=Enter,Exit=ESC”.
- 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 cue list.”
- 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 b-f of the TRANSMIT CUE POINTS to the ST300 section.

b. RECEIVE CUE LIST 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 to “Receive CUE List?
YES=Enter, Exit=ESC.”
- c) Press [ENTER] from 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

- 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 b-g of the RECEIVE CUE POINTS from the ST300 section.

Reference . . .

11. 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	<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), Audio4(A4) on/off.</p>						
WIND MODE	<p>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).</p> <p>Select fast wind speed (3.9 to 23.7) by pressing Softkey below SPD.</p>						
SLOMO	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>ST300 display shows:</td> <td>SLOMO with:</td> <td>WHEEL</td> </tr> <tr> <td></td> <td>TBAR</td> <td>Speed Prset</td> </tr> </table> <p>Press Softkey [TBAR] (or [WHEEL]) to toggle between them.</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 [SPEED] 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 MENU. OR Turn the Wheel to select another item.</p> <p>(Continued on next page)</p>	ST300 display shows:	SLOMO with:	WHEEL		TBAR	Speed Prset
ST300 display shows:	SLOMO with:	WHEEL					
	TBAR	Speed Prset					

	<p>For Wheel only: Press Softkey [PRSET] to select the SLOMO Preset Speed Mode.</p> <p>Press Softkey [UPDATE]. When exiting SLOMO mode, the last used speed is saved in the Preset Speed register.</p> <p>Press Softkey [STATIC]. The Preset Speed register is NOT updated when exiting SLOMO mode. It is only changed by pressing [SHIFT] + [SLOMO] (PRESET SLOMO).</p>
ST300 SETUP	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">ST300 SETUP</p> <p style="text-align: center;">Clear Cues SetDefault</p> </div> <p>Press Softkey beneath ClearCues to clear all Cue Points to 00:00:00:00. Press Softkey [YES] when asked “Are You Sure?”</p> <p>Press Softkey beneath SetDefault to set ST300 to default settings. Press Softkey [YES] when asked “Are You Sure?”</p>
DISPLAY SOFTWARE VERSION	The version number for the currently installed software is displayed.
DROP FRAME	Press Softkey to select DROP FRAME ON or OFF. Used in conjunction with Timecode Generator preset.
RECORD	Press Softkey to select single button or 2-button record. RECORD = [REC] Only. OR [REC] + [PLAY].
FREEZE	Press Softkey to enable or disable FREEZE at Record OUT point. Changing mode automatically clears FREEZE point.

12. FUNCTION TABLE

Function	Key Press	Description
EE On/Off	[EE]	Toggle EE mode on/off. Status indicator is on when EE is on.
ENTER TIME	[ENTER TIME]	To manually enter timecode numbers into the currently displayed Cue Point, enter the desired timecode number using the numeric keypad. Press [ENTER] to save your entry. OR [ESC] to exit without saving. To enter a GOTO location without altering the contents of the Cue Point, enter the desired timecode number using the numeric keypad. Press [GOTO] to search to the entered time. Press [ESC] to exit without searching.
FREEZE ON LAST GOOD VIDEO	Active in SLO-MO only.	In SLO-MO mode, STILL frame the VTR when the current time code is within 6 frames of the last Record OUT point (memorized automatically upon exiting Record mode). Enable, disable or clear FREEZE point from SETUP MENU.
GOTO CUE or ENTERED TIME	[GOTO]	Search the VTR to the contents of the currently displayed Cue Point. If ENTER TIME is active (LED is on), search the VTR to the entered time. To enter a GOTO location without altering the contents of the Cue Point - Press [ENTER TIME]. Enter the desired timecode number using the numeric keypad. Press [GOTO] to search to the entered time. Press [ESC] to exit without searching.
GANG	[SHIFT] + [VTR#1] [SHIFT] + [VTR#2] [SHIFT] + [VTR#3] [SHIFT] + [VTR#4]	Select VTRs to gang together. The ganged VTRs' LEDs will turn on. Press [ESC] to exit.
GOTO FREEZE POINT	[SHIFT] + [GOTO]	Search VTR to FREEZE point (last Record Out point).
FFWD	[FFWD]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
JOG	[JOG]	Select JOG mode and enable the Wheel.
LAST CUE	[LAST CUE]	Step to the previous Cue Point Location.
NEXT CUE	[NEXT CUE]	Step to the next Cue Point Location.
PREROLL	[PREROLL]	Preroll the VTR to the contents of the currently displayed Cue Point.
RECORD	[REC]	Places VTR in the Record mode selected by RECORD MODE in the SETUP MENU. One button record.

Function	Key Press	Description
REWIND	[RWD]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
SHUTTLE	[SHUTTLE]	Select SHUTTLE mode and enable the Wheel.
SLOMO	[SLOMO]	Press SLOMO to slo-mo the VTR. Turn the Wheel or move the T-Bar to change the play speed. Press SLOMO to STILL frame. OR Press any transport key to exit.
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.
TIME PRESET (Generator Preset)	[SHIFT] + [TIME MODE]	Press to enter Time Preset. Press [ENTER] to load Time Generator. OR Press [ESC] to exit without saving.

13. 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 (DB15F) Power (DB9M) Aux (DB9F)
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

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, Male (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	9	GPI 1 In
	2	GPI 2 Out	10	GPI 2 In
	3	GPI 3 Out	11	GPI 3 In
	4	GPI 4 Out	12	GPI 4 In
	5	GPI 5 Out	13	GPI 5 In
	6	GPI 6 Out	14	GPI 6 In
	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, backlit LCD display (User adjustable contrast)

RS422 SERIAL CONNECTOR

9-Pin D-Type, Female (DB9F)

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		

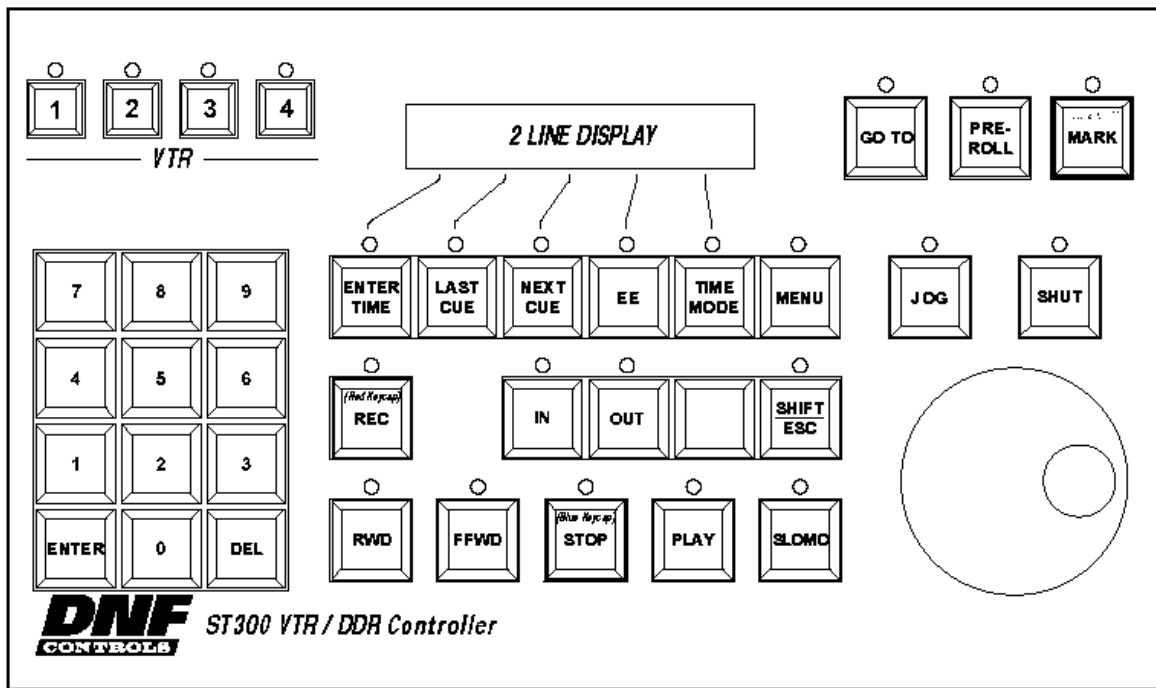
POWER CONNECTOR

9-Pin D-Type, Male (DB9M)

Pin #	1	+5v DC	6	No Connection
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	No Connection	9	Ground
	5	No Connection		

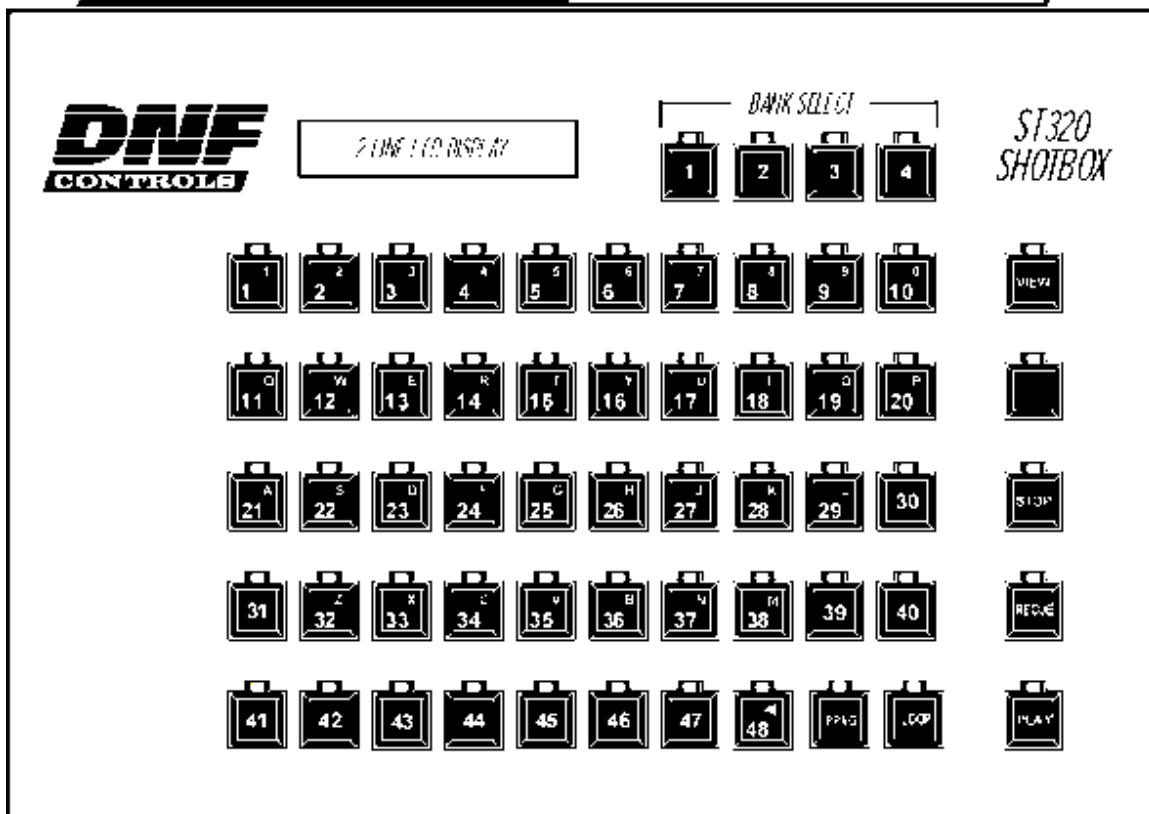
14. KEY LAYOUT

ST300 KEY CONFIGURATION 2400VS-S & 4400VS-S



ST320 SHOTBOX KEY CONFIGURATION

2400VS



15. 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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