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Model No. **ST60-S**

(-SRN, -SRK, -DRN, -DRK)

VTR CONTROLLER

Sony Protocol

USER MANUAL

Manual Version..... 2.2 033104
Document No.....ST60-S_User_Manual.doc

1. REVISION HISTORY

122903	Rev. 2.1	Company header information revised. Added DNF Controls Limited Warranty.
933194	Rev. 2.2	Corrected GPI IN/OUT Connector to 26-Pin.

2. INTRODUCTION

Controls all of these formats and VTRs, so you no longer need a different remote for each VTR: D1, D2, D3, Betacam, MII, 1-inch, ¾-inch, S-VHS, HI-8, SONY, AMPEX, BTS, PANASONIC, HITACHI, JVC

- The ST60 VTR CONTROLLER is ideal for Television Stations, Cable TV, Video Production, Video Post-production, Audio Post-production, Duplication Houses and Corporate Video Facilities.
- Use the ST60 VTR Controller for: Master Control, VTR Machine Room, Quality Control, Duplication, Transfers, Laybacks, Audio Sweetening, Graphic Work Stations, Non-Linear Editing Systems, Telecine, Spotting Sessions and Client Viewing.
- The ST60 VTR Controller gives you remote control of up to 15 functions - customize it for your specific application.
- Play, Stop, Still Frame, Rewind, Fast Forward, Jog Forward, Insert Record, Assemble Record, Crash Record, Mark In, Mark Out, AutoEdit, Pre-roll, Search to Cue, Tape Timer Select, Tape Timer Reset, Standby On/Off, Shuttle Forward, Shuttle Reverse and many, many others.

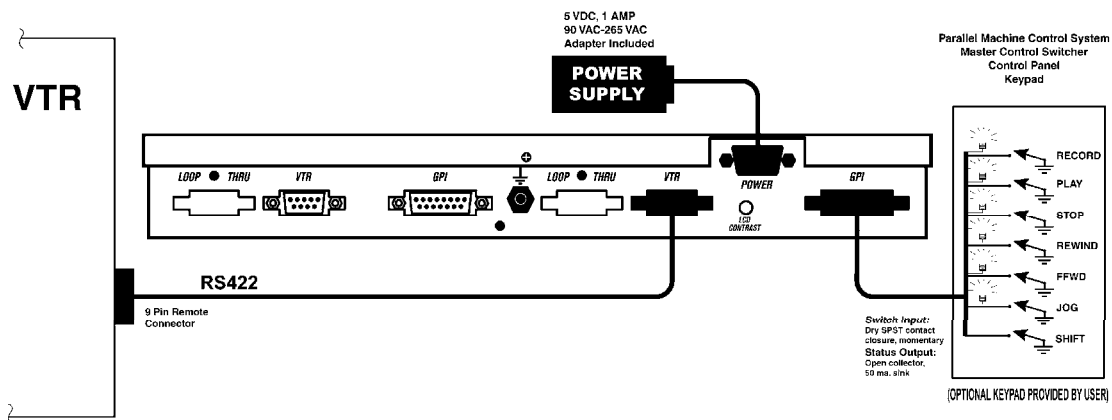
3. INSTALLATION

- a. Plug the Keypad, Control Panel, Master Control Switcher, or Parallel Machine Control System into the 15-pin connector, labeled **Keypad Input**, on the back of the **ST60**.
- b. Plug one end of a standard 9-pin, RS422 serial cable into the 9-pin connector on the back of the **ST60**.

Plug the other end of the cable into the 9-pin remote connector on the **VTR**.

- c. Plug the power supply into the DB9-M connector on the rear of the **ST60**. Plug the other end of the power supply into 90-265 VAC 50/60. The **POWER LED** on the front of the **ST60** will flash for a couple of seconds, then stay on.
- d. Select REMOTE operation on the VTR's front panel.
- e. Set the record selector switches to the desired record mode. See **RECORD SELECTOR CHART**.

Installation Diagram



NOTE: For AMPEX 1-inch and D2 VTRs, set VTR ID to 0001.

Installation is completed!

4. OPERATION

Standard functions:

- Record
- Play
- Stop
- Rewind
- Fast Forward
- Jog Reverse
- Jog Forward

Standard real-time status indicators:

- Record
- Play
- Stop
- Rewind
- Fast Forward
- Jog mode

Select the desired transport function by pressing the appropriate switch on the keypad. The corresponding status indicator will turn on.

For example, pressing [**PLAY**] will put the VTR into play mode and turn on the **PLAY** status indicator.

Press [**REWIND**] or [**FAST FORWARD**] on the keypad for high-speed wind. (LED #6, the Jog mode indicator should be off.)

Loss of serial communication with VTR is indicated by **ALL** status LEDs turned on.

Selecting **LOCAL** control on VTR's front panel turns off **ALL** status LEDs.

JOG MODE

Press and hold the [**REWIND**] or [**FAST FORWARD**] switch to increase tape speed to 3 times play speed.

Release the switch and the tape stops.

To exit JOG mode, press the [**JOG**] switch. LED #6, the JOG mode indicator, will turn off.

RECORD MODE

Four (4) Record modes are available:

Crash Record (full record), Assemble Record, Insert Record and Record Lockout.

Press only the [**RECORD**] switch to activate the desired Record mode.

The Record Status Indicator will turn on.

Note that the VTR will not go into record if “Record Inhibit” is enabled on the VTR or tape cassette.

RECORD SELECTOR SWITCHES

<u>MODE</u>	<u>S1</u>	<u>S2</u>	<u>S3</u>	<u>S4</u>	<u>S5</u>	<u>S6</u>
Record Lockout	ON	OFF	OFF	OFF	OFF	OFF
Crash Record	OFF	OFF	OFF	OFF	OFF	ON
Assemble Mode	OFF	OFF	OFF	OFF	OFF	OFF
Insert Mode (active ON)	ON	VID	AUD1	AUD2	AUD3	AUD4

NOTE: AUD3 & AUD4 should be ONLY on VTRs that support 4 channels of audio. For example: D1, D2 and D3 type VTRs.

5. SPECIFICATIONS

Physical

Size	L x W x H, 19" x 4" x 1-3/4"
Weight	4 lbs.

Front Panel

6 Status LEDs	Record, Play, Stop, Rewind, FFwd, Jog
1 Power LED	
Switches	Record, Play, Stop, Rewind, Fast Forward, Jog, Shift (-SRK, -DRK ONLY)

Rear Panel Connectors:

RS422 Serial Out	9-Pin D-type connector, female (DB9-F)
Power	5 volt D.C., 500 ma. 90-265 VAC, 50/60 Hz converter supplied
Keypad Interface	26-pin D-type high density connector, female (DB26F HD)
Switch Input	SPST contact closure, momentary
Status Output	Open collector, sink 50mA.

RS422 Serial Connector

9-Pin D-Type, Female (DB9F)

Pin # Function

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

GPI (Keypad) Interface Connector

15-Pin D-Type, Female (DB15-F)

(Version 6 Hardware)

Pin #	Function	Note
1	+9VDC=Table Top; +5VDC=Rack mount	Power for Status Indicators
2	Switch #7, Shift Mode Select	Active Low OC Output
3	LED #1 drive, Record Status Indicator	Active Low OC Output
4	LED #2 drive, Play Status Indicator	Active Low OC Output
5	LED #3 drive, Stop Status Indicator	Active Low OC Output
6	LED #4 drive, Rewind Status Indicator	Active Low OC Output
7	LED #5 drive, Fast Forward Status Indicator	Active Low OC Output
8	LED #6 drive, Jog Mode Indicator	Active Low OC Output
9	Command Common	
10	Switch #1, Record Command	Active Low (+5 Pull Up)
11	Switch #2, Play Command	Active Low (+5 Pull Up)
12	Switch #3, Stop Command	Active Low (+5 Pull Up)
13	Switch #4, Rewind Command	Active Low (+5 Pull Up)
14	Switch #5, Fast Forward Command	Active Low (+5 Pull Up)
15	Switch #6, Jog Mode Select	Active Low (+5 Pull Up)

GPI IN/OUT CONNECTOR

26Pin D-Type (High Density)

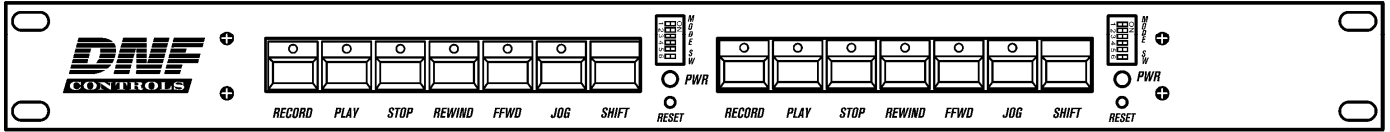
Female (DB26F HD) (Version 7 Hardware ONLY)

Pin #	1	GPI 1 Out	Record tally out (Open collector)
	2	GPI 2 Out	Play tally out (Open collector)
	3	GPI 3 Out	Stop tally out (Open collector)
	4	GPI 4 Out	Rewind tally out (Open collector)
	5	GPI 5 Out	Fast Forward tally out (Open collector)
	6	GPI 6 Out	Jog Mode indicator (Open collector)
	7	GPI 7 Out	Pause tally out (Open collector)
	8	GPI 8 Out	None
	9	Common Ground	
	10	GPI 1 In	Record command
	11	GPI 2 In	Play command
	12	GPI 3 In	Stop command
	13	GPI 4 In	Rewind Command
	14	GPI 5 In	Fast Forward Command
	15	GPI 6 In	Jog Mode Select
	16	GPI 7 In	Pause
	17	GPI 8 In	None
	18	Common Ground	
	19	+ 5 VDC	
	20	+ 5 VDC	
	21	No Connection	
	22	No Connection	
	23	No Connection	
	24	No Connection	
	25	No Connection	
	26	No Connection	

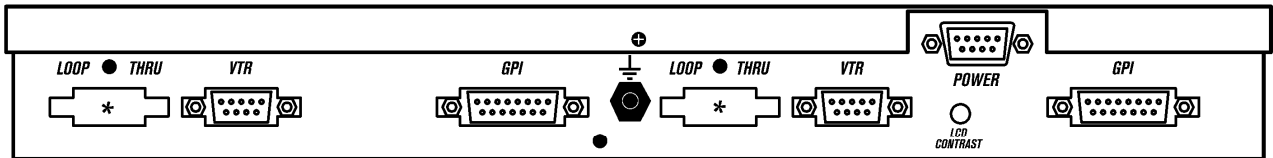
6. FRONT & REAR VIEWS

ST60-DRK (Dual Rackmount with Keypad)

FRONT PANEL



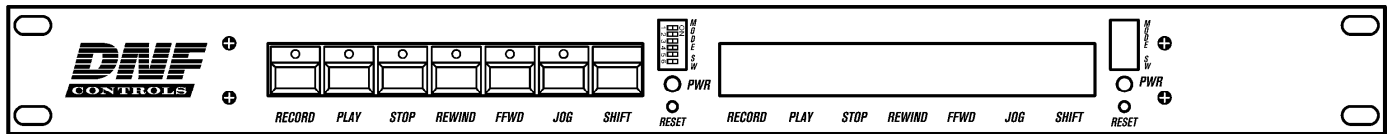
REAR VIEW



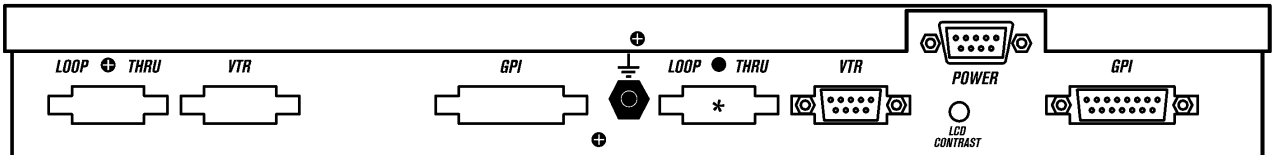
* ("Loop Thru" Connector provided for Smart or Smarter Switch Options Only.)

ST60-SRK (Single Rackmount with Keypad)

FRONT PANEL



REAR VIEW



* ("Loop Thru" Connector provided for Smart or Smarter Switch Options Only.)

7. 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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