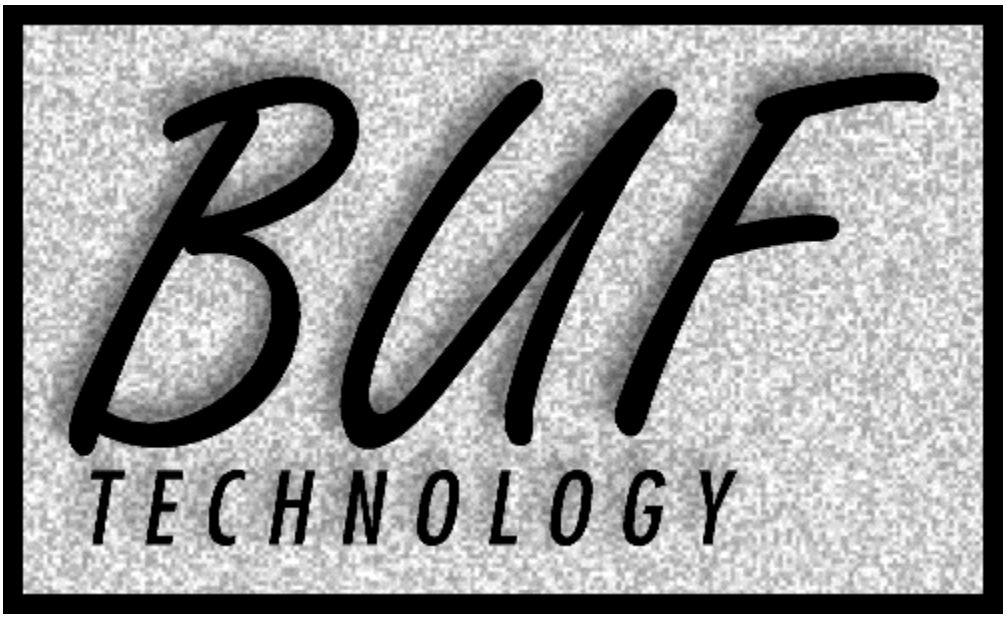


# VTS-5000-Sport

# Nonlinear Replay Control System

## INSTRUCTION MANUAL

**VERSION: 021016**

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# INTRODUCTION

### FCC RADIO FREQUENCY INTERFERENCE STATEMENT

This device complies with part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by BUF Technology could void the user's authority to operate this equipment. Shielded cables must be used with this equipment to maintain compliance with FCC regulations.

### WARRANTY STATEMENT

BUF Technology warrants that the equipment it manufactures is free from defects in materials and workmanship. Equipment that has been operated within its ratings and has not been subjected to mechanical or other abuse or modification and has failed because of such defects, will, at the option of BUF Technology, be repaired or replaced if it is returned, freight pre-paid, to BUF Technology within two years from the date of shipment. Equipment that fails under conditions other than described herein will be repaired at the price of parts and labor in effect at the time of repair.

This warranty is in lieu of all other warranties, express or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. BUF Technology is not liable for any consequential damages.

### OVERVIEW

The VTS-5000-Sport Nonlinear Replay Control System provides a user friendly vehicle for the remote control of Odetics protocol disk based video servers. It has been optimized for the control of slow motion playback. For speed reasons clip names are not used, instead recorded segments are identified by timecode using cue points. 1000 cue points consist of IN and OUT timecode points and are stored in the unit's non-volatile memory. Ten play lists of up to 100 cue points each can be played with seamless cut edits. Cue points or entire play lists can be looped indefinitely. Variable Play modes designed for film production video assist purposes are included.

The VTS-5000-Sport has ten function keys (F-keys), each of which can be configured by the user to provide either of two functions. The first function is slow motion speed preset. F-keys set to this mode instantly put the VTR into Variable Play at user defined speeds. The second function recalls a cue point and instantly cues the server to the IN point.

The Slide option is an add-on speed control device implemented using a Penny & Giles motorized linear fader. Since The Slide moves into the correct position whenever slow motion, Play or still is ordered by keystroke, smooth and instant speed adjustment is always consistently available. Tactile feedback is provided by The Slide's motor in a way that lets the operator feel when speed limits are reached, yet allows maximum speed and reverse direction override. The Slide operates smoothly and easily, yet is tough enough to survive demanding remote environments.

### PHYSICAL

The VTS-5000-Sport control panel requires only eight inches square of console space (ten inches wide with The Slide option), and has a sloped control surface for easy user access. Two backlit alphanumeric displays separate cueing and menu operations from status and timecode display. Control is always instant regardless of where the operator may be in the menu system. The transport control keys are placed within easy reach of the high quality optical encoded Knob. A numeric keypad allows quick entry of timecode and random access cue point selection and can be changed from the standard telephone style to calculator style (see PERSONALITY REGISTERS). A MARK key copies timecode into the current cue point for subsequent cueing with or without preroll.

### NON-SLIDE UNITS

To keep cable clutter off the console, a standard 8 pin modular telephone cable (RJ45) connects the control panel to the included VTA-2001 adapter that adapts the modular cable to a 9 pin 'D' connector for device interface, and to the included 12VDC, 500mA power supply.

### SLIDE UNITS

The Slide attaches to either side of the VTS-5000 panel, and connects with a short RJ45 8-pin modular cable. 12VDC, 1000mA power is supplied to the power input connector on the Slide. The Slide has four 9-pin 'D' RS-422 connectors, only one of which connects to a video server remote control port. The extra three 9-pins are not used.

## INSTALLATION

### NON-SLIDE UNITS

Connect the included VTA-2001 RS-422 adapter to the control panel via the included 15 foot RJ45 cable. A longer cable may be used, but the maximum length is restricted to about 50 feet (15 meters) by voltage drop from the power supply (9.5VDC minimum at the panel). Note that the connectors are terminated "RJ45 telephone style" not "CAT-5 data style": both connectors are crimped on the same surface of a flat cable resulting in a reversal of conductor order. Improper termination will result in failure to operate, but will not cause damage. Connect the 9-pin 'D' RS-422 connector on the VTA-2001 directly to a video server, RS-422 router or patch bay via a pin-for-pin DB9M-M cable; use shielded cable to meet FCC RF emissions standards. Connect the included power supply to the power input pigtail connector on the VTA-2001 and apply power.

### SLIDE UNITS

The VTS-5000 with The Slide, ships ready to plug-in and use. A 12VDC, 1000mA power supply is attached to a bracket that is mounted on the rear of the panel. Apply power to the power supply using the included standard IEC type power cord, or equivalent. Power input is 100-240VAC, 50-60Hz; there is no need to change jumpers or make other adjustments when changing input voltage range. Connect a standard shielded pin-to-pin DB9M-M cable from the video server's remote connector to the 9-pin connector on the Slide directly below the modular connector.

# OPERATION

## BASIC OPERATION

Playback control is optimized to take advantage of the ideal ballistics of nonlinear disk based servers. The PLAY key starts playback at normal speed. F10 sets variable play mode at still speed; turn the knob or move the Slide to vary the playback speed. Playback speed is shown on the status display in percent of play speed. The STOP key places playback at still; turning the knob jogs playback. When in jog mode, playback is dependent on the speed and direction the knob is turned. Playback stops when the knob is stopped. The FAST JOG key places the controller in a faster jog mode where playback is much faster than the normal jog mode. Due to the very fine resolution of the knob's optical encoder, precise frame-by-frame jogging is possible in the fast jog mode. The SHTL key enters the shuttle mode. Turn the knob to shuttle the playback. To stop shuttle, either use the SHTL key again or, to use the software still détente, simply whip the knob in the opposite direction and let go. Shuttle mode operates differently with the Slide. Move the slider up for forward or down for reverse. When let go, the slider springs back to the center still position. Speed is changed from zero to 5 times play speed where a stronger spring tension is felt, at which point the slope changes to 5 to 100 times play speed (the maximum speed can be changed in the SHUTTLE FORWARD LIMIT menu). Tap SHTL again to remove the spring back to center function, allowing shuttle speed to be set and run without holding the slider. While at still shuttle, the knob operates as in the jog mode without the need to press any buttons. The DOUBLE TRIANGLE keys are momentary shuttle keys. Hold to shuttle playback at a preset speed and release to return to still. The preset speed can be changed by setting the desired shuttle speed and holding ENTER while pressing the DOUBLE TRIANGLE key to be set.

## RECORD

Recording is enabled by default and can be inhibited using the RECORD SETUP menu. Recording is performed by holding REC and tapping the PLAY key.

A pick-up record feature begins recording where the last recording left off. By holding the STOP key while tapping the REC key, the server will first cue to the end of the last recording before going into hard record. In nonlinear mode, pick-up recording is always used, except that recording is picked-up at the end of the last saved segment so disk space can be reused over and over until something worth saving is recorded. A segment is then saved by a double-tap of the REC key.

To end a recording, you must tap the STOP key unless ANY VTR KEY has been set in the OPER PREFS, RECORD END MODE menu, in which case any transport key (STOP, PLAY, CUE, JOG, SHTL, etc.) stops a recording.

Input video and audio (EE mode) can be selected to pass through the server by a single tap of the REC key. Any other transport control key returns the to playback mode. EE is not selectable in nonlinear mode.

A nonlinear mode is provided for fast paced instant replay applications. If the server has a record pick-up mode, make sure it is turned off or the disk conservation features of the nonlinear mode will not work. Any time PLAY is tapped while REC is held, a cue command is sent before a record command is sent. The cue command cues the server to the end of the last saved segment so that unsaved disk space is reused over and over again until saved. Double-tap the REC key to save the currently recording segment; when you end the recording by tapping STOP, the saved segment's OUT point is automatically marked, and the next recording will pick up at that location. The REC key can be double-tapped to save a recorded segment after the recording is stopped also.

## FULL TIME RECORD

When controlling dual channel servers with shared media, full time recording is supported. The VTS-5000-Sport is connected to the playback channel while the record channel is put into record from the server control panel. When in this mode, the REC key marks a new cue point relative to the record position. The cue point that is assigned to the F1 key is incremented and reassigned to F1, then marked with the record timecode plus or minus the value set in the RECORD MARK REACTION menu. To assign a cue point number into the F1 key, simply enter the number on the numeric keypad (display reads: NOW:XXX NEW:#NNN), then press F1. This cue point plus 1 will be marked next time the REC key is used. Use the RECORD SETUP menu to select FULL TIME RECORD to enable this feature.

**SLOW MOTION**

When the tape is cued up and ready for slow motion playback, any of the ten F-keys that are configured for slo-mo speed recall, will put the server into Variable Play at the speed assigned to that preset (see the SLO-MO ITEMS, SPEED PRESETS menu for changing the preset speeds). A red LED lights above the preset F-key to indicate which one was tapped, and remains lit anytime variable speed playback is at or near the F-key's speed value. The F10 key always enters Variable Play at still speed. Speed can then be changed with the Knob (or The Slide if installed and enabled).

**LOCATING OPERATIONS**

The VTS-5000-Sport Replay Controllers come equipped with a powerful autolocation capability. One thousand cue points may be marked to timecode or may be set explicitly using the numeric keypad. Playback may be cued to any location, with or without preroll. See the CUE POINT MANAGEMENT menu for more information about locating operations.

Each of the first 9 F-keys can be configured as quick cue recall keys instead of slo-mo speed preset keys, F10 is always used for Variable Play still. Quick cue recall F-keys recall cue points to the Menu display and instantly cue playback to the IN point. To change the cue point that a quick cue F-key recalls, tap HOME, tap one or more digits of the desired cue number until the top MENU display line reads: CUE:NNN NEW:#XXX, then tap the F-key to which you want cue number XXX assigned. A green LED above a quick cue F-key lights whenever the cue number assigned to that F-key is active.

**PLAY LISTS**

There are 10 play lists available (numbered 0-9) that contain up to 100 cue points and/or pauses each. During play list playback, each cue point in the list plays from its IN point to its OUT point, at which time a seamless transition occurs to the next step's IN point. Playback continues until the end or a still is reached (play list step set to END or STL). A STL step will freeze at the previous step's OUT point, press the RIGHT arrow to cue to the next step's IN point, then PLAY to continue playback. When the END is reached, playback will freeze on the last frame unless the LOOP LED is lit, in which case the entire list will repeat endlessly.

See PLAY LIST SETUP for instructions on creating and editing play lists. Changes made to a playing list will occur as long as the step being modified is at least 2 steps ahead of playback.

To enable the play list mode and cue a list for playback, press HOME (if not home already), then press the play list number on the numeric keypad (MENU display reads NOW:xxx NEW:#<LIST #>), then press the PLAY LIST key. The PLAY LIST LED lights and the play list is immediately cued for playback. Press PLAY to begin playing the list.

The PLAY LIST key toggles the play list mode on and off if NEW:# is not showing on the MENU display. While the PLAY LIST LED is on, the CUE key cues current play list for playback. The LEFT and RIGHT arrow keys step to the previous/next steps and instantly cue to the IN point of those steps. This allows the start of each step to be checked quickly.

When the PLAY LIST LED is lit, play lists can be cued for payback using the F1-F10 keys. Keys F1-F10 cue up play lists 0-9 respectively (The list recalled is one less than the F-number). Only F-keys that are not assigned as slow speed presets (see the SLO-MO ITEMS, QUICK KEYS menu) will recall play lists; F-keys assigned as slow speed presets will operate normally in play list mode.

While home in play list mode, the MENU display's top line shows <LIST #> - <STEP #> <CURRENT CUE> <NEXT CUE> #<CUE POINT>. <LIST #> is the currently loaded play list (0-9). <STEP #> is the list's step that is cued or playing (0-99) and <CURRENT CUE> is its cue point number. <NEXT CUE> is the next step's cue point (or STL or END if assigned). <CUE POINT> is the "current" cue point that is normally shown and editable (see CUE POINT MANAGEMENT).

**LOOPING**

Looping is enabled by pressing LOOP and lighting its LED. Press again to cancel. When the LOOP LED is lit and the PLAY LIST LED is not, the currently playing cue point will seamlessly loop from its OUT point to its IN point and repeat indefinitely. If the PLAY LIST LED is lit, the entire play list will seamlessly loop from the last step's cue point's OUT point to the first step's cue point's IN point.

**NONLINEAR OPERATION**

The nonlinear operation mode includes features that conserve disk space and speed up the replay process. Cue points are called segments and are built from zero on up as segments are saved. Tapping F1 always recalls the last saved segment. The OUT point of the last saved segment is automatically used as the beginning point of a record operation. Tap F1, OUT (DOWN arrow) to view the last saved segment's OUT point. When REC is held and PLAY is tapped, the server is first cued to this location, then put into record. This sequence is completed in a very short time. Periodically, during recording, when no action worthy of replay has occurred, the operator should again hold REC and tap PLAY to record over the material just recorded. When a worthy event occurs, optionally tap MARK to mark an IN point, then double-tap REC to cause the recording segment to be saved. When ready to stop recording, tap STOP; the segment becomes the last saved segment and its OUT point is marked at the point that STOP was tapped (this will be where the next recording commences). The system then automatically cues to the segment's IN point and is ready for instant replay. If recording has already been stopped, it can still be saved by double-taping the REC key. Playback will come to a stop when the OUT point is reached. The next recording will be started at the OUT point even if it has been changed (tap HOME, OUT, MARK or set the new OUT point).

Preloaded segments that are already on the server before connecting the VTS-5000-Sport, can be saved. While in stop mode, hold REC and tap the RIGHT arrow key to increment the last saved segment number. You then need to set or mark IN and OUT points for these created segments. It is very important to set the last saved segment's OUT point (tap F1, OUT) to a timecode number after anything on the disk that you want saved because this is where the next recording will begin. Segments can be unsaved by holding REC and tapping the LEFT arrow key; this decrements the last saved segment number, effectively erasing the segments after the new last saved. Keep in mind that segments must be saved sequentially from the start of the disk because recording and saving segments always occurs sequentially. If a server does not start at zero timecode, you can set the start time of the first recording by marking or setting the IN point of segment 000 when the display reads: "NONE SAVED: #000".

**PERSONALITY REGISTERS**

The VTS-5000-Sport is equipped with ten personality registers. There are many user adjustable settings in the system, most of which are stored in personality registers. Saved personality configuration data are protected by an error detection value. When the unit is reset, even if a COLD BOOT (see below) is performed, Any personality registers that check out OK are preserved. Once you have configured the unit for how you like to work, you can store the configuration in a personality register and name it as you desire. You can recall a register anytime in the future to restore operation to the way you like it. See the PERSONALITY REGS menu for more information.

**SETTING TIMECODE VALUES**

Timecode values for cue points and menu settings are entered using the numeric keypad. When you first begin setting a register, its existing value is shown on the display. As you enter the first digit, the display is reset to zeros and the key's value shows as units of frames (or as units of seconds when setting registers that do not use frames). Each digit entered shifts the displayed digits to the left, the LEFT arrow key backspaces 1 digit (shifts digits right). The HOME, SETUP, and MARK keys cancel the operation, leaving the register unchanged. The ENTER key replaces the register with the displayed timecode numbers. The UP/DOWN arrow keys act the same as ENTER except they "trim" the register value instead. The UP arrow key (trim up) adds the displayed timecode numbers to the existing register value. The DOWN arrow key (trim down) subtracts the displayed timecode numbers from the existing register value.

**COLD BOOT**

If for any reason, you wish to reset the VTS-5000-Sport back to the factory preset configuration, a 'COLD BOOT' may be performed. This operation erases all cue points, and some internal registers; personality registers are not affected. A cold boot is accomplished by unplugging the modular cable from the rear of the panel, and holding the MARK and PLAY keys down while plugging the cable back in.

## MENU

A simple yet powerful menu system is provided that serves three basic functions. All menu operations use a separate MENU display so status and timecode display are always visible on the STATUS display. All transport functions operate normally while navigating the menu.

NOTE: Some menu items use the Knob. When using the Knob for a menu item, it is not available for transport control until the menu is exited.

The basic menu functions are:

CUE POINT MANAGEMENT Provides quick access to the most used cueing functions.
RECORD SETUP Defines the record mode to be used.
MENU ITEMS A comprehensive set of user settings and operations.

### CUE POINT MANAGEMENT

No matter where you are in the menu system, tapping the HOME key returns to the CUE POINT MANAGEMENT menu item. There are 1000 cue points. Each cue point contains separate IN and OUT points.

Playback is cued to the current cue point's IN point by tapping the CUE key. Tap the PREROLL key to cue with a five second preroll. The preroll period can be changed using the CUEING ITEMS, SET PREROLL menu item. If in SET OUT or SET DURATION modes, the CUE and PREROLL keys cue the VTR relative to the OUT point.

#### CHANGE THE CUE POINT NUMBER

Tapping the HOME key causes the current cue point's IN point to be displayed, with the cursor at the index number. There are 1000 cue points in the system that are referenced by index numbers 000 to 999. Tapping the RIGHT or LEFT arrow keys increment or decrement the current cue point. The numeric keypad keys select cue points randomly, taking effect only after the ENTER key is tapped. If, while entering numbers, an F-key that has been configured as a quick cue recall F-key is tapped, the new cue point is assigned to that F-key, the cue point is recalled, and the green LED above the F-key lights. Whenever the cue point assigned to a quick cue recall F-key is current, the green LED lights. See the SLO-MO ITEMS, QUICK KEYS menu.

#### SET THE IN POINT (CUE POINT)

After tapping the HOME key, tap the IN (UP arrow) key to change the MENU display to the SET IN mode. The current cue point's IN point register is shown and may be set or changed. Enter digits on the numeric keypad and save by tapping the ENTER key. The IN point may be trimmed (entered number added to or subtracted from the existing IN point) by using the UP or DOWN arrow keys instead of the ENTER key. Tap HOME or SETUP to cancel, LEFT arrow to backspace. Changes to the IN point do not affect the OUT point but do affect the DURATION.

#### SET THE OUT POINT

After tapping the HOME key, tap the OUT (DOWN arrow) key to change the MENU display to the SET OUT mode. This works the same as SET IN, but sets the OUT point of the cue point instead. The MARK key marks the OUT point rather than the IN point when in the SET OUT or SET DUR modes. If the MARK key is hit while holding the OUT key, the OUT point is marked, but display returns to the IN point.

#### SET THE DURATION

Tap the OUT (DOWN arrow) key while in the SET OUT mode to change the MENU display to the SET DUR mode. This allows you to define the edit length by DURATION rather than by an explicit OUT point.

Tap the IN (UP arrow) key while in the SET OUT or SET DUR modes to return the MENU display to SET IN mode. Tap the OUT (DOWN arrow) key while in the SET IN mode to return the MENU display to the SET OUT mode.

### TRIMMING TIMECODE VALUES

When setting timecode values, the ENTER key replaces the register with the displayed timecode numbers. The UP/DOWN arrow keys act the same as ENTER except they “trim” the register value instead. The UP arrow key (trim up) adds the displayed timecode numbers to the existing register value. The DOWN arrow key (trim down) subtracts the displayed timecode numbers from the existing register value. Midnight rollover is supported, using the current timecode type (24, 25, 30NDF, 30DF). The LEFT arrow key backspaces 1 digit.

### MARKING PLAYBACK TIMECODE AS IN OR OUT POINTS

Anytime the MARK key is tapped, either the IN point or the OUT point of the current cue point will be set to the timecode being read from the server. When SET OUT, or SET DUR is shown on the upper display line, the MARK key copies playback timecode into the OUT point. Any other time, the MARK key copies VTR timecode into the IN register. If the MARK key is hit while holding the OUT key, the OUT point is marked, but display returns to the IN point. Double-tapping the MARK key leaves the current cue point unchanged, increments to the next cue point and marks it instead. This allows a sequence of cue points to be marked.

See the CUEING ITEMS menu for more cue point related operations.

## RECORD SETUP

Tap the HOME key followed by the SETUP key to enter the RECORD SETUP menu. The record mode in effect is shown on the upper MENU display line. To change the record mode, use the UP/DOWN arrows until the desired mode is shown on the lower display line, then tap ENTER. The new mode will show on the upper line.

NOTE: The record mode does not change until the selection shows on the upper display line by tapping ENTER.

### RECORDING

Recording is commenced by holding REC and tapping PLAY. If record is enabled (default), a record command is sent to server. Recording will commence at the current playback position unless the nonlinear mode is enabled (see MISCELLANEOUS MENU ITEMS, CHANGE DDR MODE), the server will first be cued to the end of the last saved segment before the record command is sent. When not in nonlinear mode, holding STOP while tapping REC first cues to the end of the last recording before the record command is sent. If RECORD INHIBIT is selected, holding REC and tapping PLAY has no effect.

The available record modes are:

RECORD INHIBIT
HARD RECORD
FULL TIME RECORD

### RECORD INHIBIT

Makes it impossible to make any type of recording from the VTS-5000-Sport.

### HARD RECORD

The “hard” or “crash” record mode begins recording at the current playback position. Any recorded material will be recorded over. When the hard record mode is selected and REC is tapped while holding the STOP key, the server will cue to the end of the last recording before beginning a new one.

### FULL TIME RECORD

Sets the full time record mode. This mode is for use with dual channel shared media servers that can record material on one channel while playing the same material on another channel. The VTS-5000-Sport is connected to the playback channel only. When this mode is selected and recording is in progress, press the 1 key to learn the record channel's record timecode, or the 2 key to set the record timecode. Only certain servers will learn the record timecode (e. g. Doremi V1x2 operating in "limited" Odetics mode). For other servers, set the record timecode by setting a number a few seconds in the future, then pressing ENTER just as the record

channel reaches it. Once the record time is learned or set, it is updated internally to keep up with the record channel. If recording is stopped and resumed, the record timecode must be relearned or set. Pressing the REC key marks a new cue point to the record time plus or minus the reaction time setting (see RECORD MARK REACTION). Playback can then be cued to this location for playback. The cue point that is marked with the REC key is the one assigned to the F1 key, plus 1. To assign a cue point number into the F1 key, simply enter the number on the numeric keypad (display reads: NOW:XXX NEW:#NNN), then press F1.

**COMPRESSION (FAST FORWARD VIDEO ONLY)**

Sets the compression mode to be used with the next recording. After changing the compression mode, the approximate available record duration is displayed.

**MENU ITEMS**

All other menu items are accessed by tapping the SETUP key twice.

MENU ITEMS contains numerous submenus that allow a multitude of operational settings to be modified according to the user's preferences.

The submenus available in MENU ITEMS are:

PERSONALITY REGS
DDR SETUP ITEMS (FAST FORWARD ONLY)
SLO-MO ITEMS
SLIDE SETTINGS
CUEING ITEMS
TIME CODE ITEMS
OPER PREFS
MISCELLANEOUS MENU ITEMS

Menu items are scrolled using the UP and DOWN arrow keys. A menu item is selected by tapping either the ENTER or RIGHT arrow key.

Some Menu Items use the Knob for user input, during which time it cannot be used for Jog/Shuttle operation. Tapping HOME, SETUP, JOG, SLOW, or SHTL exits a menu that uses the Knob and returns the Knob to Jog/Shuttle control.

**PERSONALITY REGS**

A submenu containing these items:

SAVE PERSONALITY
RECALL PERSONALITY REGISTER
RECALL DEFAULTS
CALCULATOR STYLE # KEYS *

* The numeric keypad style is never erased even by a COLD BOOT or the MISCELLANEOUS MENU ITEMS, INITIALIZE UNIT menu.

Many aspects of the way the VTS-5000 works are adjustable by the user. Almost all of these settings are stored in registers called Personality Registers. Ten personality registers are provided, allowing different users to store their favorite configurations. A user may wish to use two or more registers to recall different modes of operation depending on the task currently being undertaken. Registers may be named with alphanumeric names up to sixteen characters long. Items stored in the personality registers include: Record mode including channel enables and animation CELL DURATION, timecode type (LTC, VITC, Tape Timer), preroll, Jog and Variable Play (slo-mo) adjustments, Slide enable/disable, various key function options including quick cue recall and slo-mo speed presets, programmed still and record end protect values, and nonlinear mode selection.

**SAVE PERSONALITY**

Saves the current configuration in a personality register. Tap numeric keypad keys after selecting this item to show the names of the various registers. Tap ENTER when an unused register is seen (indicated by the name DEF for default). You may enter any 16 character name you wish by using the Knob to select a letter or number, and the RIGHT and LEFT arrow keys to move to other character positions (the name defaults to "REG n" where n is the Personality Register number). Tap ENTER when done.

**RECALL PERSONALITY REGISTER**

Recalls a previously stored personality register. The last used personality register number is shown along with it's name. Tap numbers on the numeric keypad to show the names of the other registers. Tap ENTER to recall one, or any other key to cancel.

**RECALL DEFAULTS**

Restores the factory default configuration. Tap ENTER to recall defaults, any unsaved configuration settings will be lost. Saved personality registers remain unaffected. Tap any other key to cancel.

**CALCULATOR STYLE # KEYS**

Changes the numeric keypad to calculator style (7-8-9 on the top row, 1-2-3 on the bottom). The default is telephone style with 1-2-3 on top and 7-8-9 on bottom. It is necessary physically to remove these keycaps and swap their positions when changing this menu item. The keypad style is stored separately in protected memory and is never erased or changed except by using this menu item.

**PLAY LIST SETUP**

This menu is used to create and edit play lists. Play lists are sequences of up to 100 cue points and/or pauses that can be played in real time with seamless edits. There are 10 play lists. Play lists can be edited while playing and changes made at least 2 steps beyond the current step will play when reached. See PLAY LISTS for instructions on playing play lists.

The following screen shows on the MENU display:

```
PL#   STEP CUE  FN
 0     00   END  INS
```

The top line is a heading identifying the 4 adjustable play list entry fields, the bottom line shows a single play list entry. An underline cursor shows under one of the fields indicating which field to adjust. The LEFT and RIGHT arrow keys are used to move the cursor between the play list fields.

PL# is the play list being edited (0-9). Use the UP/DOWN keys to change the play list to edit, or directly select one with the numeric keypad keys.

STEP is the current play list step. The UP/DOWN keys change the step being edited, or type a step number directly on the numeric keypad. Press ENTER to go directly to the end of the list (last entered step).

CUE if a number, identifies the cue point that is played when this step is reached during play list playback. The cue's IN point will begin playing immediately after the previous step's cue point's OUT point. This process will continue until the END of the list or a STL (still) is reached. Use the numeric keypad to enter the number of the cue point to assign to the current step. The UP/DOWN arrows step to the next or previous step. The ENTER key also steps to the next step so a sequence of steps can be assigned quickly by entering a series of numbers.

FN is the special function that will occur when the cursor is under this field. Use the UP/DOWN arrows to change the function and ENTER to use the function shown.

- INS inserts a new step at the current step and ripples all higher steps up one.
- DEL deletes the current step and ripples all higher steps down one to fill the deleted one.

END makes the current step become the end of the play list.
STL sets the current step to cause a still. Playback will pause at the last frame of the previous step, but the list can be started again to continue through the following steps.

**DDR SETUP ITEMS (FAST FORWARD ONLY)**

A submenu containing these slow motion operational adjustments:

SC PHASE ADJUST
H PHASE ADJUST
EXTERNAL REFERENCE
EXTERNAL DDR CONTROL
EXTERNAL DDR UPDATE
ERASE ALL VIDEO

**SC PHASE ADJUST**

Allows adjustment of output subcarrier phase by turning the knob.

**H PHASE ADJUST**

Allows adjustment of output horizontal phase by turning the knob.

**EXTERNAL REFERENCE**

Allows external reference to be enabled or disabled.

**EXTERNAL DDR CONTROL**

Causes the VTS-5000-Sport to tri-state its RS-422 transmit lines. An external device connected in parallel to the RS-422 line from the VTS-5000-Sport can begin controlling the DDR.

**EXTERNAL DDR UPDATE**

Sets the Fast Forward Video DDR to enter software update mode, releases control and causes the DDR to request an XMODEM transfer of new operational software from a connected PC.

**ERASE ALL VIDEO**

Deletes all recorded material from the disk system. When this menu item is selected, a confirmation message is displayed, press HOME to cancel. Erasing all video cannot be undone!

**SLO-MO ITEMS**

A submenu containing these slow motion operational adjustments:

QUICK KEYS
SPEED PRESETS
MAX FWD SPEED
MAX REV SPEED
FORWARD KNOB TRAVEL
REVERSE KNOB TRAVEL
VP DISPLAY MODE
FILM PLAYBACK SPEED
FILM SPEED SLO-MO

**QUICK KEYS**

Changes the configuration of the function keys (F-keys). Tap an F-key to select it, the F-key's current mode is displayed. Use the UP/DOWN arrow keys to select another mode. The ENTER key changes the key's mode, any other key cancels. The available modes for F-keys are: SLOW SPEED PRESET, which puts playback into Variable Play at the speed preset in the SPEED PRESETS menu. QUICK CUE RECALL, which recalls the cue point stored with that F-key and then cues the VTR to that point.

**SPEED PRESETS**

Adjusts the slow motion speed preset values used by F-keys set to SLOW SPEED PRESET. The top MENU display line shows a speed preset number and its current value. Use the Knob to change the value shown on the lower line, and store it by tapping the ENTER key; the new preset will then show on the upper line. Speeds are expressed as percent of Play speed. Use the F-keys or UP/DOWN arrow keys to select other presets to change. Tap the LEFT arrow key when finished.

**MAX FWD SPEED**

Limits the maximum forward playback speed when using the Knob for Variable Play. This setting is not used with The Slide (see SLIDE SETTINGS, MAX FWD SPEED). Use the numeric keypad to set the fastest slo-mo speed you desire. Slow motion speed limits may be set from zero to 9999% Play speed. The default is 100% (Play speed).

**MAX REV SPEED**

Same as MAX FWD SPEED, except it limits slow motion speed in the reverse direction.

**FORWARD KNOB TRAVEL**

Sets how far the Knob needs to turn in the slo-mo mode to change speed from zero to full forward slow speed. Turn the Knob backwards until the display reaches the minimum value of 0001. Then turn the Knob forward the amount you want to have to turn it during slow motion operation to reach maximum slo-mo speed. The default is a count of 240 (1/2 Knob turn). This feature has no effect when The Slide is installed and enabled.

**REVERSE KNOB TRAVEL**

Same as FORWARD KNOB TRAVEL, but for the reverse slo-mo direction.

**VP DISPLAY MODE**

Sets the mode used to show slow motion speed when in the Variable Play mode. NORMAL (ROUNDED) causes the speed to be shown in percent of Play speed, rounded to the nearest percent. ACCURATE causes the actual speed as specified in the SONY protocol to be displayed with nine digits of precision and a floating decimal point. FILM SHOOT FPS causes display in the form: X/Y where X is the intended project or transfer film speed (see below) and Y is the exposure frame rate. This selection allows simulating projection of off-speed cinematography at various frame rates. For example, 100% Variable Play would be shown as: "24/24.00" or "30/30.00", depending on the setting of FILM PLAYBACK SPEED. Similarly, 50% speed would be displayed as "24/48.00" (or "30/60.00") indicating an exposure frame rate of 48fps (or 60fps). Note that while the speeds shown are accurately requested of the server, they do not necessarily reflect the actual playback speeds. Some servers to not actually perform variable speed playback at the requested speeds but instead round to the nearest incremental speed they support.

**FILM PLAYBACK SPEED**

Specifies the intended project or transfer film frame rate for use with the FILM SHOOT FPS display mode described above. If the film is intended for 24fps theatrical release, the default setting of 24.00 is correct. If intended for transfer to PAL video at 25fps, set this item to 25.00.

**FILM SPEED SLO-MO**

Enables/disables playback speeds to be limited to commonly used film exposure rates.

**SLIDE SETTINGS**

A submenu containing these items:

ENABLE SLIDE
ADJUST VP SLIDE
DÉTENTED SLO-MO
QTY OF DÉTENTES
MAX FWD SPEED
MAX REV SPEED

**ENABLE SLIDE**

Enables/disables the use of The Slide for Variable Play and Shuttle control. Use this menu to disable The Slide if you would rather use the Knob for these functions, or if The Slide malfunctions. If The Slide is not connected, this menu item has no effect. The default is enabled.

**ADJUST VP SLIDE**

Allows you to adjust the break points and détente speeds (if enabled) that The Slide uses when in Variable Play (Slow Motion Playback) mode. Move The Slide to a break point (Play, Still, Rev Play positions), then hold the Enter key while moving The Slide. The position of the break point is saved when you release the Enter key. While adjusting, The Slide moves freely only between the legal positions for that break point, and resistance is felt when attempting to move beyond these limits. If you move the Rev Play break point up from the lowest position (default), a Fast Rev range is enabled (see MAX REV SPEED). When DÉTENTED mode is enabled, use this menu to change the speeds assigned to the détentes.

**DÉTENTED SLO-MO**

Enables/disables the DÉTENTED Slide mode. When disabled (the default), The Slide moves freely between the Still and Play break points, and speed is changed in 1% increments. When enabled, mechanical détentes are felt in this range, and speeds are changed only to those programmed for the détentes. Détented mode can be temporarily disabled anytime by double-tapping the Slow key. Also, when a speed is recalled (either by a Speed Preset F-key or by a speed stored in a cue point), that does not match a détente speed, the non-détented mode is used until a speed is recalled that does match, or until Stop or Play is used.

**QTY OF DÉTENTES**

Selects the number of détentes to use in détented mode.

**MAX FWD SPEED**

Sets the speed to use when The Slide is moved to its top position when in Variable Play (Slow) mode. Speed will change in 1% or greater increments between 100% and this speed, as The Slide is moved from the Play break point to the top position.

**MAX REV SPEED**

Sets the reverse speed to use when The Slide is moved to its bottom position when in Variable Play (Slow) mode. Speed will change in 1% or greater increments between -100% and this speed, as The Slide is moved from the Reverse Play break point to the bottom position. This speed is only active if the Reverse Play break point has been moved from the (default) bottom position using the ADJUST VP SLIDE menu.

**CUEING ITEMS**

A submenu containing these items:

RECORD MARK REACTION
SET PREROLL
SCROLL CUES
COPY RANGE
ERASE RANGE

**RECORD MARK REACTION**

Defines the number of frames that is added to the current record time to create cue points when in the full time record mode (see FULL TIME RECORD). If the setting is negative, the number is subtracted to create a cue point that is before the record progress. This allows cue points to be set after the action to be replayed has already happened. The default is -60 frames (60 frames earlier than when marked).

**SET PREROLL**

Defines the preroll time used for the cue with preroll command (PREROLL key).

**SCROLL CUES**

Scrolls through all one thousand cue points by using the Knob. Cue points are displayed very rapidly, allowing you to watch timecode numbers while turning. Cue marking and cueing tape can be done in this mode. Any cue point operation performed while in this menu will use the cue point shown on the display at that moment.

**COPY RANGE**

Moves ranges of cue points between areas within the cue memory. You may want to keep a range of cue points in a reserved area of memory for later use.

**ERASE RANGE**

Clears any range of cue points to zeros.

**TIME CODE ITEMS**

A submenu containing these items:

TC DISPLAY MODE

**TC DISPLAY MODE**

Allows the system to operate in frames from midnight in lieu of HR:MIN:SEC:FRM. When enabled, timecode is displayed in frames, with 23 hour times shown as negative frames. When entering time numbers for cue points, preroll, etc., time is entered as frames. For example, tap HOME, IN, 1000, ENTER to set the current IN point to 1000 frames. Since timecode numbers are stored internally as hours, minutes, seconds and frames, cue points will show and enter differently in this mode when the unit is not connected to a server from when it is connected to a server using drop frame or 25FPS timecode.

**OPER PREFS**

A submenu containing these operational preference items:

KNOB SENSITIVITY
JOG MAX SPEED
JOG SENSITIVITY

RECORD END MODE
STOP KEY FUNCTION
SHUTTLE FORWARD LIMIT
SHUTTLE REVERSE LIMIT

**KNOB SENSITIVITY**

Reduces the overall sensitivity of the Knob by two or four fold. If you feel the Knob is too sensitive in all modes, use this item to reduce it's sensitivity.

**JOG MAX SPEED**

Limits the maximum speed tape will move while in the Jog mode. Use the Knob to set the fastest speed tape will travel by turning the Knob in the Jog mode. The JOG MAX SPEED may be set from zero to 500% Play speed. The JOG MAX SPEED defaults to 300% Play speed. This setting does not affect the Fast Jog mode.

**JOG SENSITIVITY**

Adjusts the speed the Knob must be turned in the Jog mode to reach the JOG MAX SPEED. This setting does affect the Fast Jog mode.

**RECORD END MODE**

Enables the use of any transport key (such as CUE, PLAY etc.) to end a recording. By default, only the STOP key will cause recording to stop.

**STOP KEY FUNCTION**

Changes the function of the STOP key from the Stop command to Jog still (VP still for The Slide). The default is still.

**SHUTTLE FORWARD LIMIT**

Specifies the maximum Shuttle speed, expressed in multiples of Play speed. This feature allows Shuttle speed to be limited to that witch provides the best compromise between speed and recognizable picture. If in Shuttle while using this menu item, the results take effect as you make the adjustment. The best way to set this item is as follows: Set to zero, exit this menu item, tap the SHTL key and turn the Knob to the maximum speed. Since the limit is set at zero, the playback won't move. Then reenter this menu item and adjust the maximum speed as desired.

**SHUTTLE REVERSE LIMIT**

Same as SHUTTLE FORWARD LIMIT, but for the reverse direction.

**MISCELLANEOUS MENU ITEMS**

A submenu containing these items:

VERSION AND TEST
CHANGE DDR TYPE
CHANGE DDR MODE
LED BRIGHTNESS
MENU DISPLAY ANGLE
STATUS DISPLAY ANGLE
DEVICE TYPE
SLIDE EXERCISER
INITIALIZE UNIT

**VERSION AND TEST**

Displays the software version date and performs a test of the program PROM. If the PROM test fails, a PROM FAILED! message appears along with a checksum error number; the program PROM needs replacement. The unused stack space (MEM FREE:) is also displayed and should be a non-zero number, if not, please call the factory. Tap any key to start the LED and keyboard test. All 24 LED indicators light and characters are written to the VTR STATUS display as each keyboard key is tapped. Turn the Knob to end the keyboard test.

**CHANGE DDR TYPE**

Sets the basic server type. GENERIC DDR (default) is the setting to use for most servers. FAST FWD VIDEO is designed with features that take advantage of the unique capabilities of the Fast Forward Video Omega series models. Use this setting only if controlling FFV DDRs. If using a Fast Forward Video server, the VTS-5000-Sport will automatically change it to BVW-75 mode and recordings made in Native mode will be unusable.

**CHANGE DDR MODE**

Selects the nonlinear operational modes. NORMAL is the default, and is intended for control of servers in basic applications. DDR is the nonlinear mode referred to in numerous locations in this manual. The nonlinear mode has features that conserve disk space and speed operation when using servers in instant replay applications. If the server being controlled has a “pick-up record” feature, make sure it is turned off.

**LED BRIGHTNESS**

Adjusts the brightness of the 24 LED indicators. Turn the Knob until the desired LED brightness is reached, then tap any key.

**MENU DISPLAY ANGLE**

Adjusts the MENU display contrast to optimize for viewing angle.

**STATUS DISPLAY ANGLE**

Adjusts the STATUS display contrast to optimize for viewing angle.

**DEVICE TYPE**

Displays the four digit hexadecimal identification code reported by a connected Sony protocol VTR.

**SLIDE EXERCISER**

Exercises The Slide (if it is installed and connected) for test purposes.

**INITIALIZE UNIT**

Performs a cold boot and restores factory settings to all parameters. All ten personality registers are set back to the factory default configuration. Before initialization occurs, ENTER must be tapped to verify. Factory defaults can be recalled in the PERSONALITY REGS, RECALL DEFAULTS menu without erasing personality registers. Warning!: Enemies might be made by erasing the personality registers!

# OPTIONS

## THE SLIDE OPTION

The SLIDE is a linear control implemented using a Penny & Giles motorized fader. It operates in Shuttle and Variable Play (Slow) modes in lieu of the Knob. In these modes, the Knob acts as it does in the Jog mode.

In Slow mode, moving the slider changes playback speed down to still and up to Play. Mechanical resistance is felt when trying to move beyond these limits, and when forced past this resistance, playback in reverse and above play speed is possible. Mechanical détentes can be enabled using the SLO-MO ITEMS, DETENTED SLO-MO menu item. When enabled, détentes are felt between still and Play speeds and only the best looking slo-mo speeds are used. The break point positions of The Slide: Play, Still, and Reverse Play, and the détente speeds can be adjusted using the SLIDE SETTINGS, ADJUST VP SLIDE menu item.

While The Slide is in the Variable Play area in the Slow mode, the Knob may be used to speed or slow playback. When at still, the Knob operates similarly to the Jog mode. When speed is set to 100% variable speed, the Knob can be used to slew the VTR faster or slower to manually achieve synch with another playback device.

In Shuttle, the slider moves easily from the +5 to -5 times Play speed points, and from +5 to +100 and –5 to –100 with firmer resistance. There is a spring back to still action in Shuttle mode. To scan a large segment of video without holding the slider, tap the SHTL key while already in the Shuttle mode to disable the spring back to still feature. The default maximum speeds can be changed using the OPER PREFS, SHUTTLE FORWARD LIMIT and SHUTTLE REVERSE LIMIT menu items. When at shuttle still, the Knob acts like it does in Jog mode.