Table of Contents

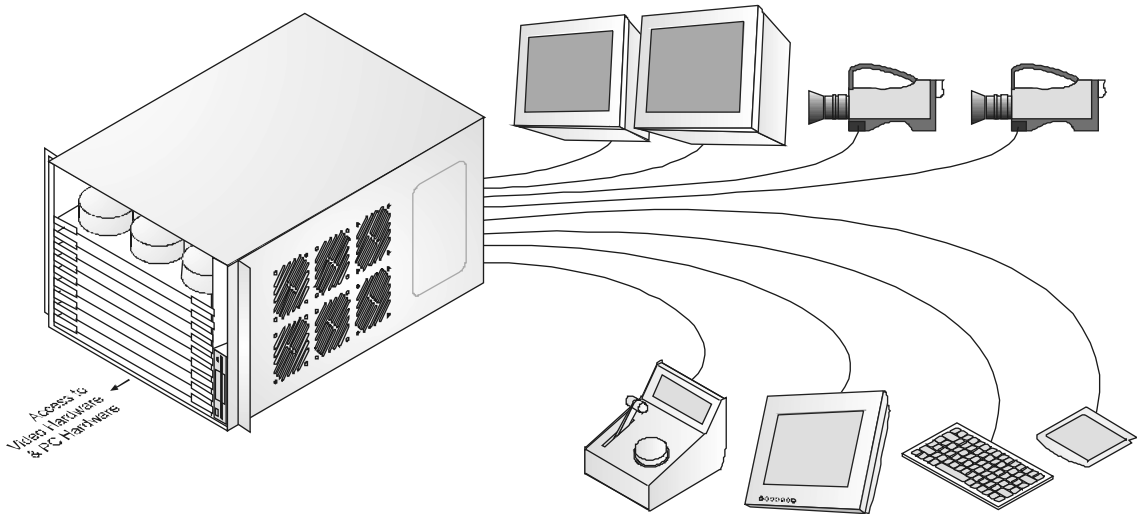
System Components

Disk Recorder – Main specifications

All EVS Disk recorder systems are full digital in PAL or NTSC standard with a Search function while recording live action, Clip Management and non-linear on line editing, instant playback.

The CLIP & PLAYLIST MANAGEMENT functions allow the operator to keep up to 450 clips (multiply by the number of cameras) on disks and of course to replay all or some of them. A PLAYLIST is constituted of a list of clips (50 PLAYLISTS can be defined)

With the internal 10-bit digital keyer-mixer board, two synchronized clips can be displayed simultaneously in split screen mode and target tracking and painting features can be blended with recorded material.



VIDEO

- 4:2.2 SMPTE/CCIR 601 digital 10-bit
- NTSC: 525 lines / PAL: 625 lines
- Inputs: 1 to 6 channels – Full frame Synchronizer at each input.
- Outputs: 1 to 6 channels
- Monitoring: PAL/NTSC/SDI with keying of TC and useful information
- Genlock: BlackBurst
- Internal 10-bit digital keyer–mixer board

AUDIO

- Analogue balanced: Up to 16 channels of 16 bits, 48 kHz
- AES/EBU: Up to 16 channels of 16 bits, 48 kHz
- SDI-embedded: up to 8 channels.

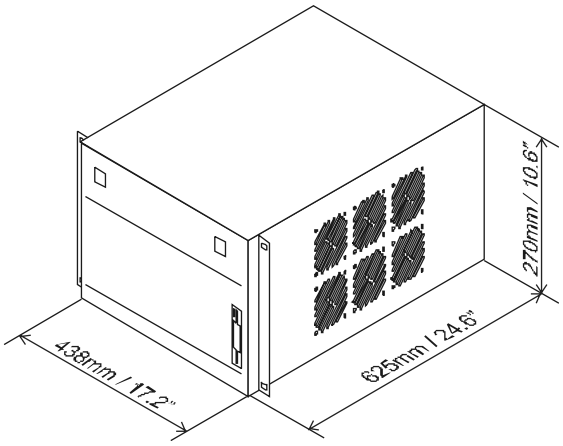
CAPACITY

- Motion-JPEG compression @1,5:1 to 20:1
- Internally: up to 12 hours @ 6:1
- With external storage: Up to 24 hours @ 6:1

RAID LEVEL: 5

The Video Raid uses striping process across 5 disk drives. The video data is striped over the first 4 drives while the parity information is saved on the fifth drive. If one drive is damaged, the Video Raid can use the parity information to recover the missing information.

LSM Mainframe



The LSM mainframe is housed in a 19 " (485 mm) rack frame with extended depth and 6 rack unit (266 mm) height.

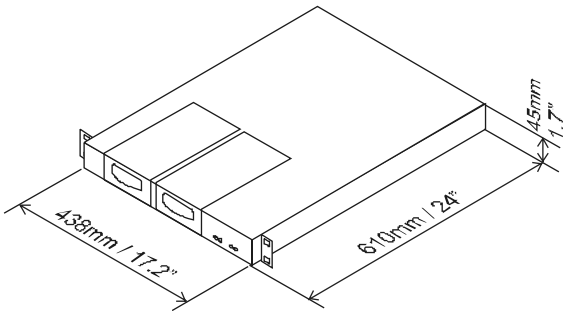
It contains all the EVS developed boards: namely, the JPEG digital video compression board (CODEC's), the VIDEO RAID board (save/re-call the digital video data to/from hard disks) with 5 separate standard SCSI-2 busses, a Keyer / Mixer / Frame Buffer board and the Digital I/O boards (CCIR601).

The unit is controlled by an internally installed IBM compatible PC motherboard with its own separate floppy, IDE hard drive, VGA graphic board and keyboard.

Typically, five 18 GB hard disk drives are mounted internally in the unit. The record capacity with two arrays disks (2 x 5 x 18GB) can reach 24 hours (@ 6:1 compression rate. For higher capacity (up to 48 hours at 6:1), the additional drives are fitted internally and/or in external chassis.

The user interface is made through the keyboard and different menus rolling on the VGA monitor, one or two dedicated remote control panels with lever, jog-knob and LCD display, and tablet or touch screen for specials effects.

ADR (Audio Disk Recorder)

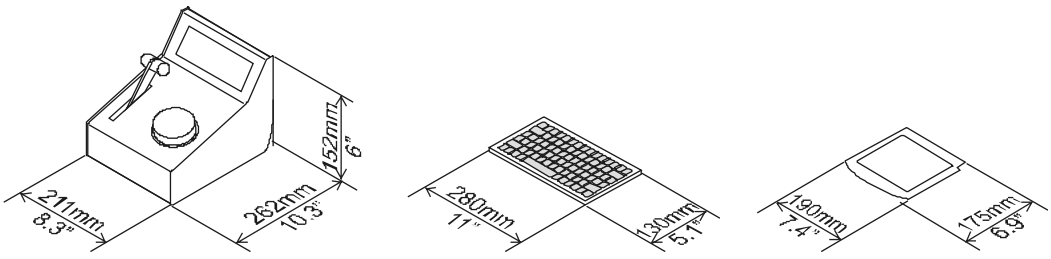


Audio data is recorded uncompressed in the ADR unit. The inputs / outputs are available from the rear panel of the 1 U external rack.
Two models are available:

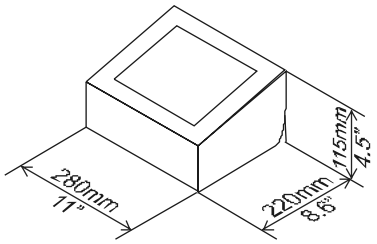
- **Analogue ADR** provides Analogue Audio Channels 4 stereo IN / 4 stereo OUT 600 Ohms Balanced XLR.
- **Digital ADR** provides 4 AES/EBU audio stereo inputs (110 Ohms balanced XLR), 4 AES/EBU audio stereo outputs (110 Ohms balanced XLR), plus 2 analogue unbalanced audio stereo monitoring outputs.

As the VDR (Video Disk Recorder) and the ADR are two separate units, the Genlock source is primordial and must be identical in order to avoid non-synchronism problems (lipsync) between the video and the audio while recording or playing back the material. On the rear panel of the Video Disk recorder unit, the LOOP connector of the REF CB/BB is assigned to that end.

Remote controller / Keyboard / Tablet

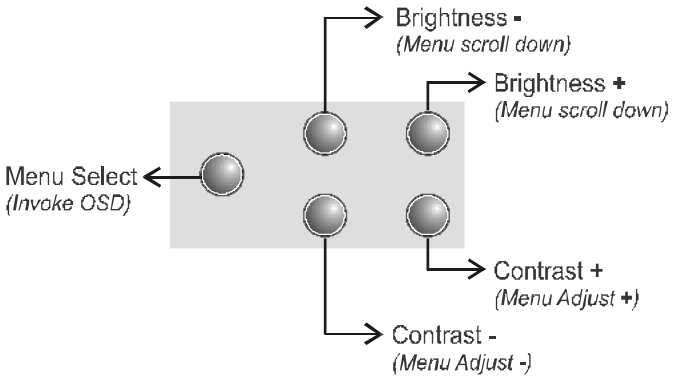


Touchscreen



The factory default picture settings have been carefully chosen so that most users will have no need to make any adjustments, other than brightness and contrast which have dedicated buttons on the user control panel. However, if adjustment is necessary, there is an on-screen user interface supplied.

The layout and operation of the 5 buttons is as follows:



Menu Select:
Pressing this button invokes the OSD (On-screen Display) of adjustment parameters. A menu of icons appears on the middle of the display. A Second operation of the button returns to normal display mode.

Brightness adjust (-)
In normal display mode operation of this button will decrease the brightness of the display (if permitted). An adjustment level will be displayed on-screen. After no adjustment for 5 seconds, the new setting will be stored and the display returns to normal.
In OSD mode, this button will scroll down the list of available adjustments. The current adjustment parameter will flash.

Brightness adjust (+)
Operations of this button is the same as above except that it will increase the brightness in normal display mode, and scroll up the list of available adjustments in OSD mode.

Contrast adjust (-)
In normal display mode this button will decrease the contrast level of the display. An adjustment for 5 seconds, the new setting will be stored and the display returns to normal.
In OSD mode, this button will select the currently highlighted adjustment and decrease its value. An adjustment level will be displayed on screen.

Contrast adjust (+)
In normal display mode this button will increase the contrast level of the display.
In OSD mode, this button will select the currently highlighted adjustment and increase its value. An adjustment level will be displayed on screen.

Try this To adjust the Picture

1. Press the Menu Select button to invoke the OSD menu.
2. Press the Brightness + or – button to scroll up/down the menu to the desired option.
3. Press the Contrast + or – button to both select and increase/decrease the chosen parameter.
4. New settings are automatically stored.
5. To return to the OSD menu press Brightness + or –
6. To return to normal display mode press Menu Select button again. Alternatively, after no adjustments for approximately 5 seconds, the new parameters are automatically stored and the unit reverts to normal display mode.

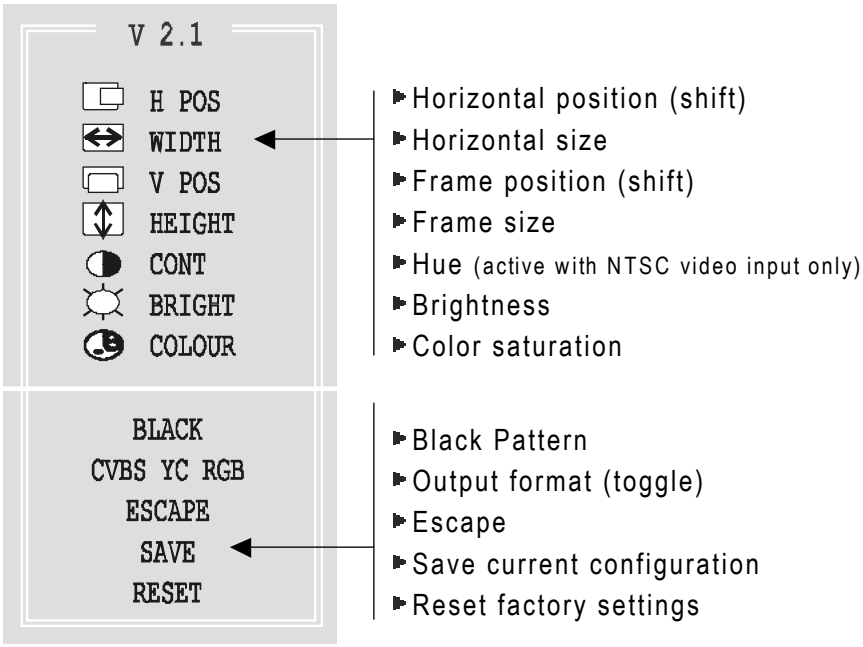
Note: All picture parameters are stored independently for PAL/SECAM and NTSC signal types and for the different input (CVBS, Y/C) so may need to be set up again if the signal type used is changed at a later date (except output format)

Output format

The output signal to drive the LCD may be either non-interlaced, where both input fields of the interlaced video signal are output together as one frame, or line doubled, where each incoming field is scaled to fit the LCD resolution and output in turn as an interlaced signal.
The non-interfaced format is best for displayed stable or slowly moving images and gives a flicker free image. The line doubled format is best for moving images or scrolling text and gives a slight flicker on static images, akin to a CRT video monitor.

OSD menu

An OSD menu is used to show which parameter is to be adjusted and to display its current level or position. In addition to displayed the detected signal type and which input is being used, a menu of icons is displayed to select the required parameter from. These are:



Try this To restore factory settings:

If a picture set-up has become hopelessly lost or confused, it is possible to restore the factory settings. Proceed as follows:

1. Press the Menu Select button
2. Scroll down the options to the RESET Item
3. Press Contrast + or-
4. The unit will return to it's factory default parameters and normal display mode

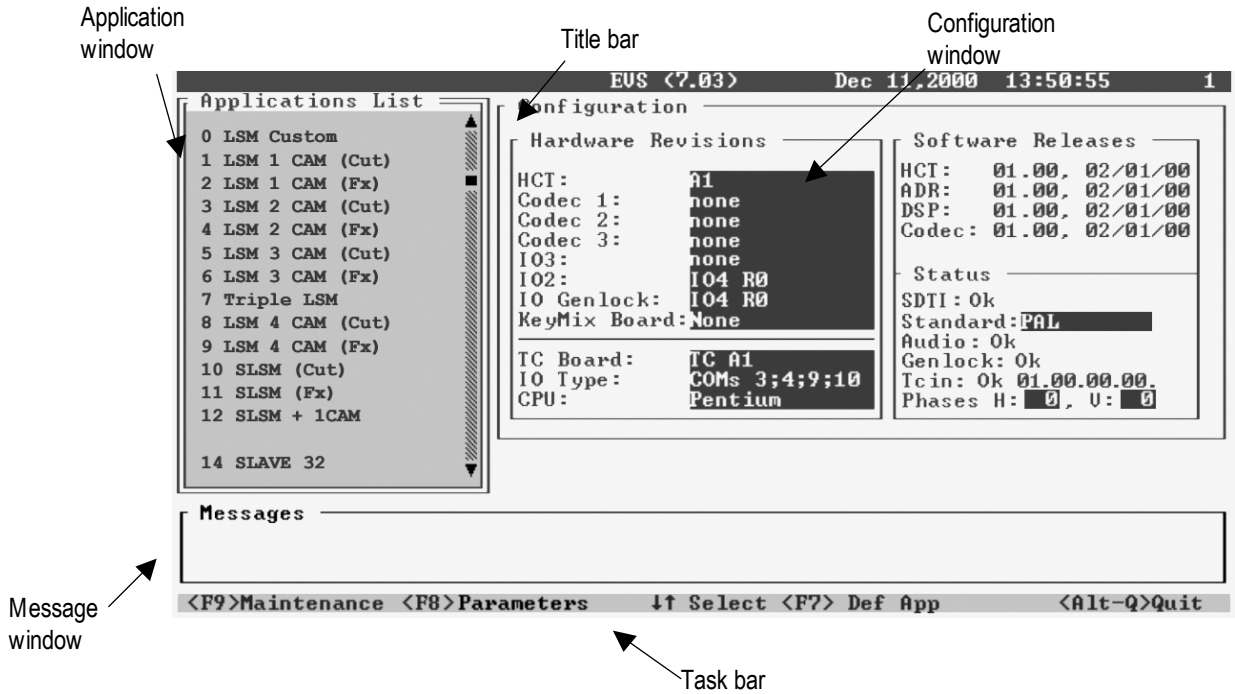
EVS Software

Main Menu

The EVS software is used for configuration and maintenance operations. It is also used to select which application to run, since EVS disk recorders have the ability to run various dedicated applications (SLAVE32, LSM 1 CAM, LSM 2 CAM, LSM 3 CAM, LSM 4CAM, TRIPLE LSM, SLSM)

When turning on the EVS mainframe, the first step is the PC boot sequence, followed by a check of the hardware status, and finally the EVS software is started.

Between the PC boot and the hardware check, the video driver is loaded and the display is automatically switched to B&W video mode, allowing the VGA screen to be displayed on a standard composite video monitor using the VGA↔BNC adapter provided with the unit. If a VGA screen is directly connected to the VGA connector of the mainframe, press simultaneously **< ALT >** and **<Backspace>** on the keyboard to switch back to the VGA mode.



Title bar: the first line of the VGA screen is the title bar. It contains the EVS software revision and current date and time.

Task bar: the last line of the VGA screen is the task bar. It contains a summary of the keyboard controls available.

Application list: this window contains the list of all applications installed on the system.

Configuration window: this window shows the hardware configuration of the system.

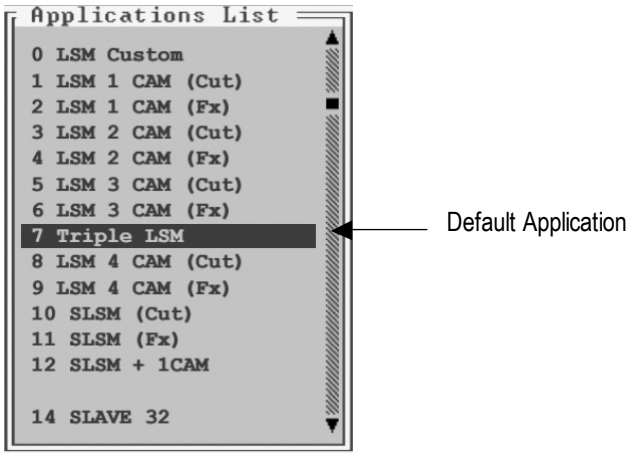
Message window: messages are displayed in this field to provide more information on the current selection.

Try this To move inside the EVS MAIN MENU

- The active window is always shown with a double frame
- Use <↑>, <↓> and <TAB> keys to change the selection inside the active window
- Use <ENTER> to select an item or to confirm an entry
- Use <ESC> to go back to the previous menu or to cancel an entry

Application List

If a default application has been previously selected, this application will start automatically after a few seconds if no key is hit. If a default application hasn't been defined or if the space bar is hit, the system will remain in the EVS main menu and wait for the operator's next command.



You can avoid the automatic start by pressing the <SPACE BAR> or the <↑> and <↓> keys immediately when entering the EVS software.

The default application is shown with yellow characters and a blue background in the Application window.

Try this To define a default application

1. In the Application window, select the new default application using the <↑> and <↓> keys.
2. Press <F7> or call the Maintenance menu (<F9>) and select 'Default Application'
3. If a default application was already defined, a message warns the operator that it will be disabled. The command can be confirmed with <ENTER> or cancelled with <ESC>
4. If the command is confirmed, another message tells you that a new default application has just been defined.

Try this To remove the default application

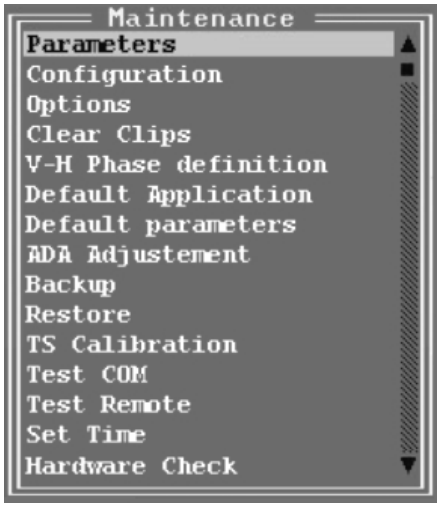
1. In the Application window, select the application that is the current default application (yellow characters with blue background) using <↑> and <↓> keys.

2. Press <F7> or call the Maintenance menu (<F9>) and select 'Default Application'

3. A message warns the operator that the current default application will be disabled. The command can be confirmed with <ENTER> or cancelled with <ESC>

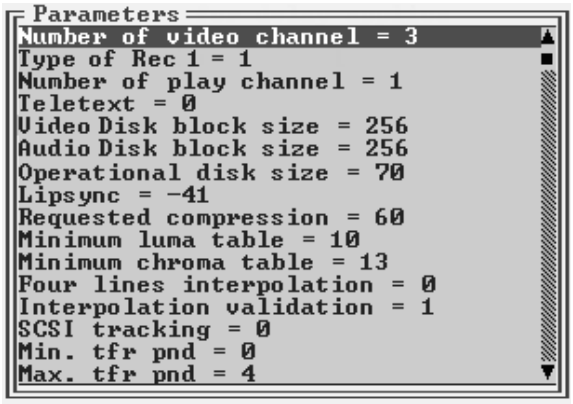
Maintenance Menu

The EVS maintenance menu contains various options to configure and check the system:



PARAMETERS

Parameters are used to define video & audio channels, adjust compression ratios & picture quality, etc.



Most parameters are factory preset, and should not be modified without advice of qualified EVS staff. Improper values for some parameters will prevent the proper operation of the system. Please refer to the Technical Reference Manual for correct values.

Try this To modify a parameter:

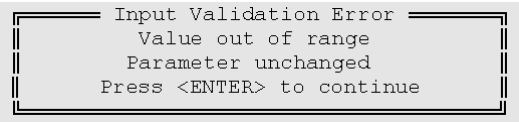
1. Select the desired parameters using the <↑> and <↓> keys of the keyboard to highlight the corresponding line and press <ENTER>

2. A new window appears, with information related to the selected parameter. The current value of the parameter is displayed in a small box and can be modified to enter the new value. In some cases, several values can be adjusted from the same window. Use the <TAB> key to move from one box to the next one. The selected box is shown with a RED background. The other accessible boxes are shown with a BLUE background. Some information about the current parameter is displayed in the center of the window.

3. When the desired box is selected, modify the parameter to its new value and press <ENTER> to validate. If several values can be adjusted in the same window, pressing <ENTER> will validate the current entry and place the cursor in the next box. If the current box is the last one, the system will go back to the general Parameters window

4. When you are back to the general Parameters window, you can either select a new parameter to adjust using the <↑> and <↓> keys, or press <ESC> to go back to the Maintenance Menu

If the new value of the parameters is out of range, the old value is not changed and the following message appears:



PARAMETERS OVERVIEW:

Number of video channel:
selects the number of RECORD channels of the application, the partition of the disk storage between these channels, and the associated audio channels.

Type of Rec 1:
defines the type of RECORD channels. Two types are available: 1 Record, and 3 Records from Super Slow-motion

Number of play channel:
defines the number of PLAY channels.

Teletext:
enables or disables the record/playback of teletext information. Range: [0 or 1].

Video Disk block size:
defines the size (in KB) of data blocks to be recorded to or read from the disks. Range: [64...1024]. Default value is 256 KB.

Audio Disk block size:
defines the size (in KB) of data blocks to be recorded to or read from the disks. Range: [64...1024]. Default value is 256 KB.

Operational disk size:
percentage of the disks actually used to store the data. Range: [0...100]. Restricting access to the center part of the drives increases the performance of the system but decreases capacity. Default value is 70 %.

Lipsync:
delay (in field) between video and audio signals. Range: [-50...50]. A positive value means video is ahead of audio. A negative value means audio ahead of video. This adjustment is done during the RECORD process. A new Lipsync value will apply for the next recorded pictures only.

Requested compression:
is the M-JPEG compression ratio (x 10) that the system must reach. Range: [17...32767]

The dynamic compression management system modifies compression tables for each recorded field to keep the compression ratio as close as possible to the target. A value of 60 for those parameters means an actual compression ration of 6 (comparable to ßetacam SP quality). A value of 30 means an actual ratio of 3 (comparable to Digital ßetacam quality). A lower compression means better picture quality and less storage capacity but a higher bandwidth is required. Improper values can lead to exceed disks performance, causing frozen pictures during playback.

Minimum luma table:
value of the lowest table to use for quantization of luminance. Range: [2...255]. The lower the table, the better the final picture quality. However, lower tables require a higher bandwidth. Improper values can lead to exceed disks performance, causing frozen pictures during playback.

Minimum chroma table:
value of the lowest table to use for quantization of chrominance. Range: [2...255]. The same remark applies for this parameter. Since the chrominance is not as critical as luminance for picture quality, slightly higher values can be used. A typical ratio between chrominance and luminance tables is 1.2.

Four lines interpolation:
selects between 2-line and 4-line interpolation process. Range: [0 or 1]. Select 0 for 2-line interpolation and 1 for 4-line interpolation. Refer to the next parameter for details.

Interpolation validation:
enables or disables the interpolation process. Range: [0 or 1]. Select 0 to disable the interpolation process, or 1 to enable the interpolation process selected by the 'Four lines interpolation' parameter. The interpolation process is aimed at reducing the vertical jitter of the pictures that is present during slow-motion replays. This vertical jitter is actually caused by a violation of the frame parity when playing back the pictures at less than 100 % speed.

The process consists in re-building new frames to produce a more transparent result. These frames have to be interpolated - i.e. calculated by making suitably weighted averages of adjacent lines. There are 2 interpolation modes: the 2-line interpolator and the 4-line interpolator. Disadvantage of this method is that it reduces the vertical resolution. This is particularly true with the 4-line interpolator.

The user can choose between 3 modes:

- **no interpolation:** maximize the vertical bandwidth of the picture but a vertical jitter appears in “SloMo”. [set 'Interpolation validation' to 0, whatever the value of 'Four lines interpolation']

- **2-line interpolator:** reduce the vertical jitter but the vertical bandwidth is reduced. [set 'Four lines interpolation' to 0 and 'Interpolation validation' to 1]

- **4-line interpolator:** the picture is perfectly steady but the vertical bandwidth is even more reduced. [set 'Four lines interpolation' to 1 and 'Interpolation validation' to 1]


All VTRs use interpolation in PLAY VAR mode.

SCSI tracking:
enables or disables the tracking of the disk bandwidth to adjust automatically compression parameters in order to achieve the best picture quality. Range: [0 or 1]

Min. tfr pnd: internal EVS parameter. Do not modify.

Max. tfr. Pnd: internal EVS parameter. Do not modify.

Max. tfr. rec: internal EVS parameter. Do not modify.

Min. Adjusting Factor: internal EVS parameter. Do not modify.

Max. Adjusting Factor: internal EVS parameter. Do not modify.

Vigor: internal EVS parameter. Do not modify.

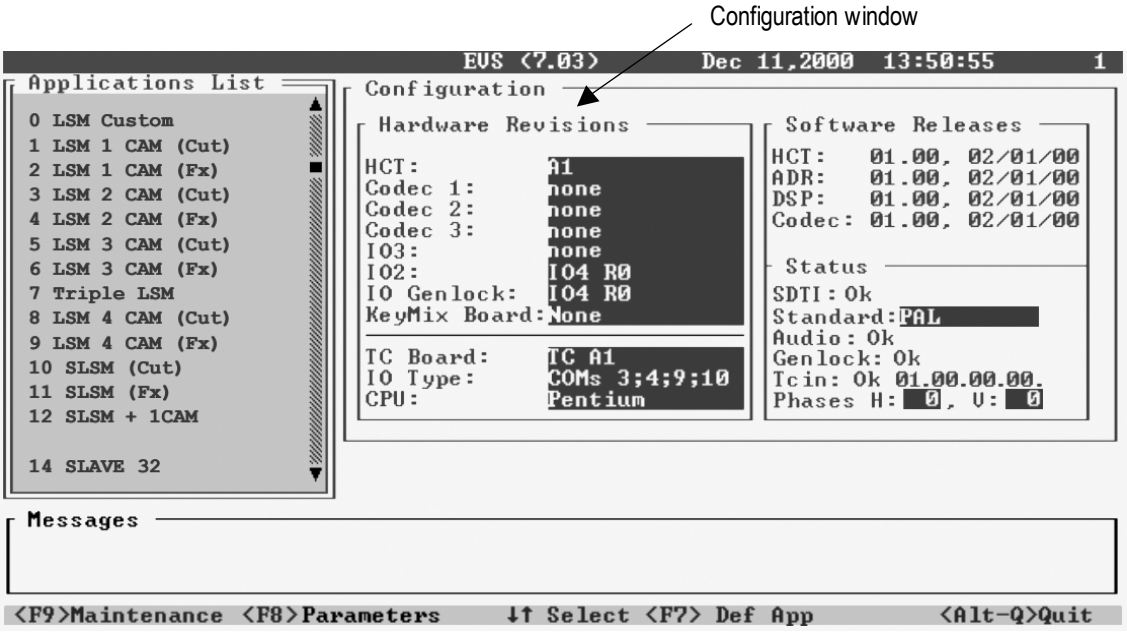
Try this **To Modify the audio-video synchronisation** ('Lipsync' parameter)

1. In the EVS Main Menu, use <↑> and <↓> keys to select the application for which you want to modify the parameter
2. Press <F9> to open the Maintenance Menu
3. Use <↑> and <↓> keys to move inside the list until 'Parameters' is highlighted
4. Press <ENTER> to select this feature. The Parameter window is displayed on the right side of the screen
5. Use <↑> and <↓> keys to move inside the list until 'Lipsync' is highlighted
6. Press <ENTER> to select this parameter. A new window appears in the center of the screen.
7. Type in the new value of the lipsync.
8. Press <ENTER> to validate and return to the general Parameters window.
9. Select another parameter to modify or press <ESC> to return to the Maintenance Menu.

CONFIGURATION

This function is used to set the hardware configuration of the system (boards release numbers, port settings,...).

The configuration is factory preset, and should not be modified without advice of qualified EVS staff. Improper values for some parameters will prevent the proper operation of the system.



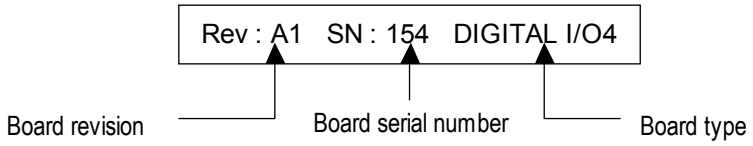
To enter the configuration window, press <F9> to open the Maintenance menu, select 'Configuration' and press <ENTER>. A double frame appears around the Configuration window, and the cursor blinks next to the 'HCT' label.

Try this To modify an item in the configuration window

1. Use <↑>, <↓> or <TAB> keys to select the desired item
2. Press <SPACE BAR> several times until the correct value appears
3. Select another item to modify or press <ESC> to go back to the Maintenance Menu

CONFIGURATION ITEMS OVERVIEW :

Note: The order of the boards in this list is the same as inside the mainframe, from top to bottom. The revision of a board located in the front part of the mainframe is always written on a white label on the left front end of the board



HCT:
revision of the HCT board (Video Raid controller). The HCT board is located immediately underneath the disk tray and is present on all systems.

CODEC 1:
revision of the first CODEC board (immediately underneath the HCT board). This board is present on all systems

CODEC 2:
revision of the second CODEC board (located underneath CODEC1). Not present on all systems.

CODEC 3:
revision of the third CODEC board (located underneath CODEC2). Not present on all systems.

IO3:
revision of the third digital I/O board (*) (located underneath CODEC3). Not present on all systems.

IO2:
revision of the second digital I/O board. Not present on all systems.

IO Genlock:
revision of the first digital I/O board. This board is present on all systems.

KeyMix Board:
revision of the Keyer/Mixer board (located underneath IO Genlock). Not present on all systems.

TC Board:
revision of the TimeCode board. This board is plugged into the PC motherboard at the back of the system.

IO Type:
settings of the serial ports of the PC and the standard multi-I/O board. Most applications use COMs 1, 2, 9, 10. Refer to the application's operation manual for detailed settings.

CPU :
type of processor used on the PC motherboard (486 or Pentium)

Standard :
video standard PAL or NTSC

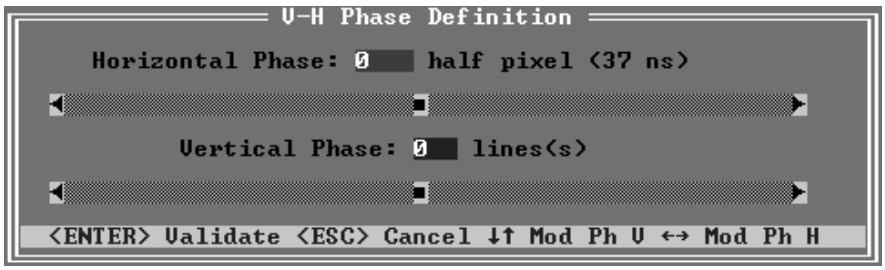
CLEAR CLIPS

This function is used to erase all clips and playlists of all applications present on the system.

1. Call the Maintenance menu (<F9>)
2. Use the <↑> and <↓> keys to select the 'Clear Clips' line and press <ENTER>
3. You are asked to confirm (<ENTER>) or cancel (<ESC>) the command

V-H PHASE DEFINITION

This option is used to adjust the horizontal and vertical digital phase of the mainframe.



The horizontal phase can be adjusted between - 25900 ns and +25900 ns by 37 ns steps.
The vertical phase can be adjusted between -6 and +6 video lines by one-line steps.

Try this To modify V-H phase definition.

1. Use <↑> and <↓> keys to adjust the **horizontal phase** or type in the value in the 'Horizontal Phase' box
2. Use <←> and <→> keys to adjust the **vertical phase** or type in the value in the 'Vertical Phase' box
3. Use <TAB> key to toggle between 'Horizontal Phase' and 'Vertical Phase' boxes

4. Press <ENTER> to save the new values and return to the Maintenance menu or press <ESC> to go back to the Maintenance menu without saving the changes

DEFAULT PARAMETERS

This command erases all current parameters settings and restore the default factory settings for all applications. When selecting this option, you are asked to confirm the command or cancel it.

ADA ADJUSTMENT

This command allows you to adjust the luminance and chrominance levels on all outputs according to the color bars displays (75% and 100%). This option acts as a color bar generator and is useful to adjust the ADA converters settings.
The E2E mode (Live) displays one input on the PGM output. So the video signal passes through the disk recorder system and through the ADA converters. To switch inputs, press <space bar> in the I/O Input scanning window.

Note: To perform properly the ADA adjustments, please refer the ADA user's manual.

BACKUP / RESTORE

Not yet available

TS CALIBRATION

When the Touch Screen option is installed, it can be calibrated using this command. If the Touch Screen is not installed, a warning message is displayed.

TEST COM

This option is used to test all serial ports of the system. It will show peripherals connected to the ports or echo terminator. It can be used to identify problems on RS232 and RS422 links.

TEST REMOTE

This option is used to test the link between the remote panel and the mainframe, and the proper operation of the keys and display of the remote panel. Several commands can be sent to the remote:

SET TIME

The Set Time command allows adjusting the system time & date.

Example of time format:
- 11:24:32a for 11 h 24 min 32 sec (a.m.)
- 10:58:00p for 10 h 58 min 00 sec (p.m.)

Example of date format:
- 10-24-1999 for October 24, 1999
- 03-15-2001 for March 15, 2001

HARDWARE CHECK

The aim of this software is to detect the Hardware detection and to check the validity of the Data recorded to disks.
Different checking processes are available from the Maintenance menu: Automatic Test, Disk defect, Disk read & verify, Disk replace & rebuild, SCSI information, Memory cache test and Log files. Please refer to the Technical Reference manual for complete information.

Multicam Software

Orientation

This section of the training guide describes:

- **VGA screens**
  - Clip screen
  - Playlist screen

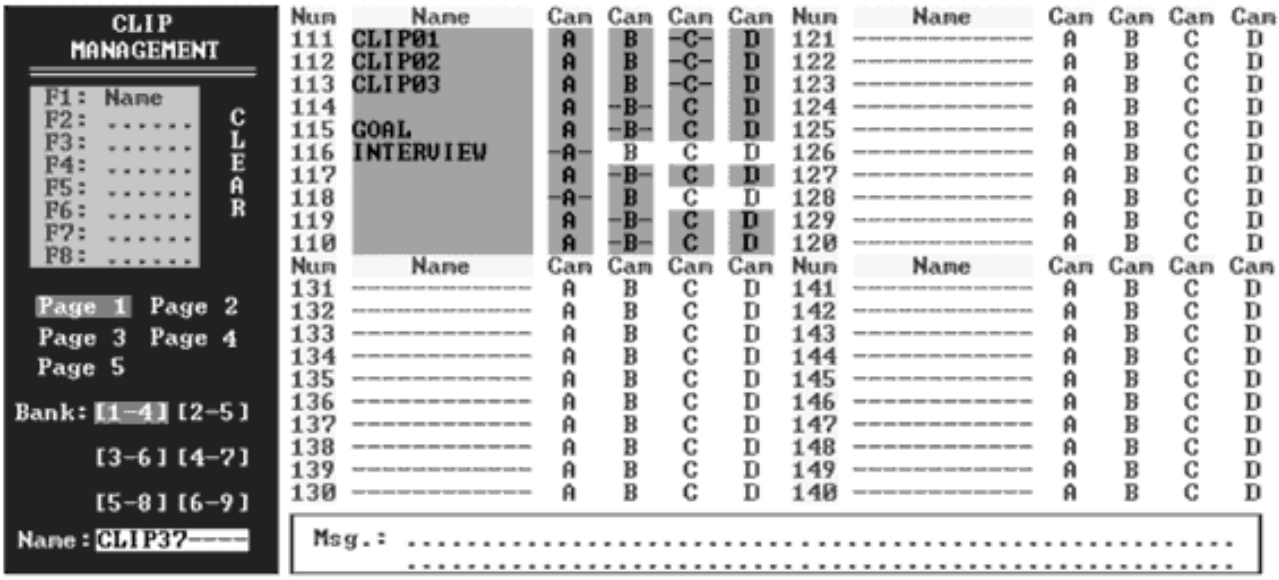
- **Video Monitoring**
  - In clip mode
  - In playlist mode

- **Remote controller**
  - LED colors
  - F-Keys & small buttons
  - Soft keys
  - Transport controls
  - LCD display
  - Remote panel operations
  - SETUP menu

VGA screens

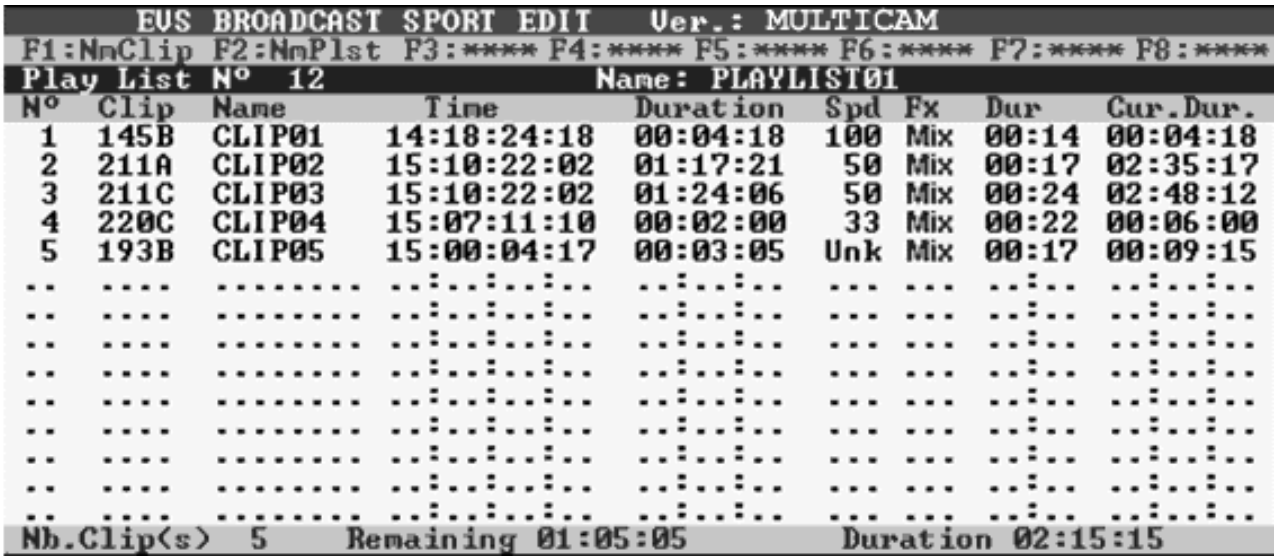
CLIPS SCREEN

The VGA Clips screen can be accessed by selecting **F9** on the keyboard.



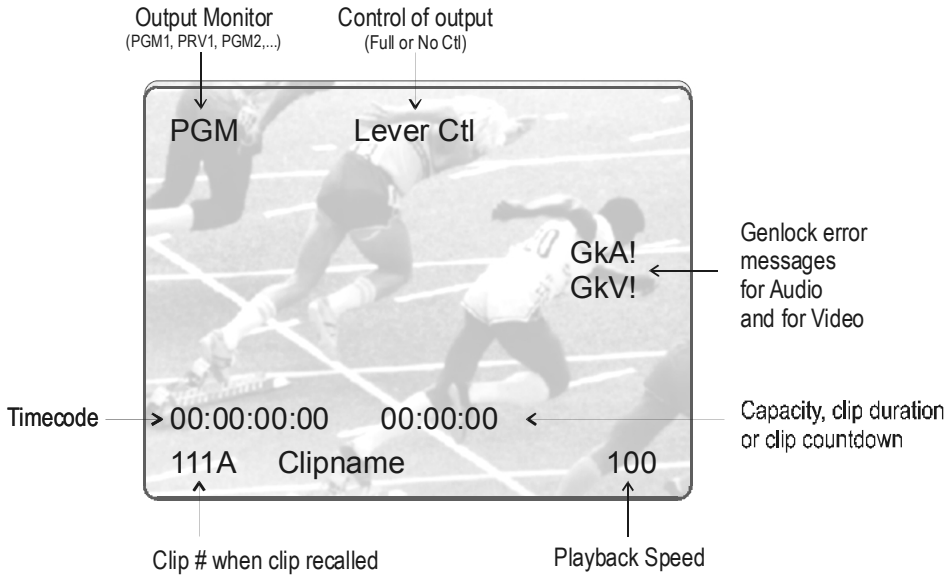
PLAYLIST SCREEN

Select **F10** on the keyboard to view the VGA playlist screen.

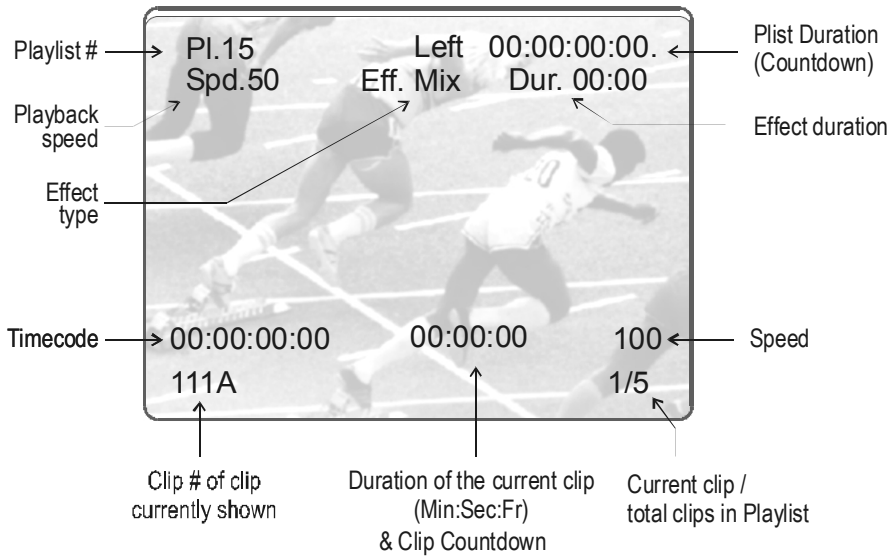


Video Monitoring

CLIP MODE

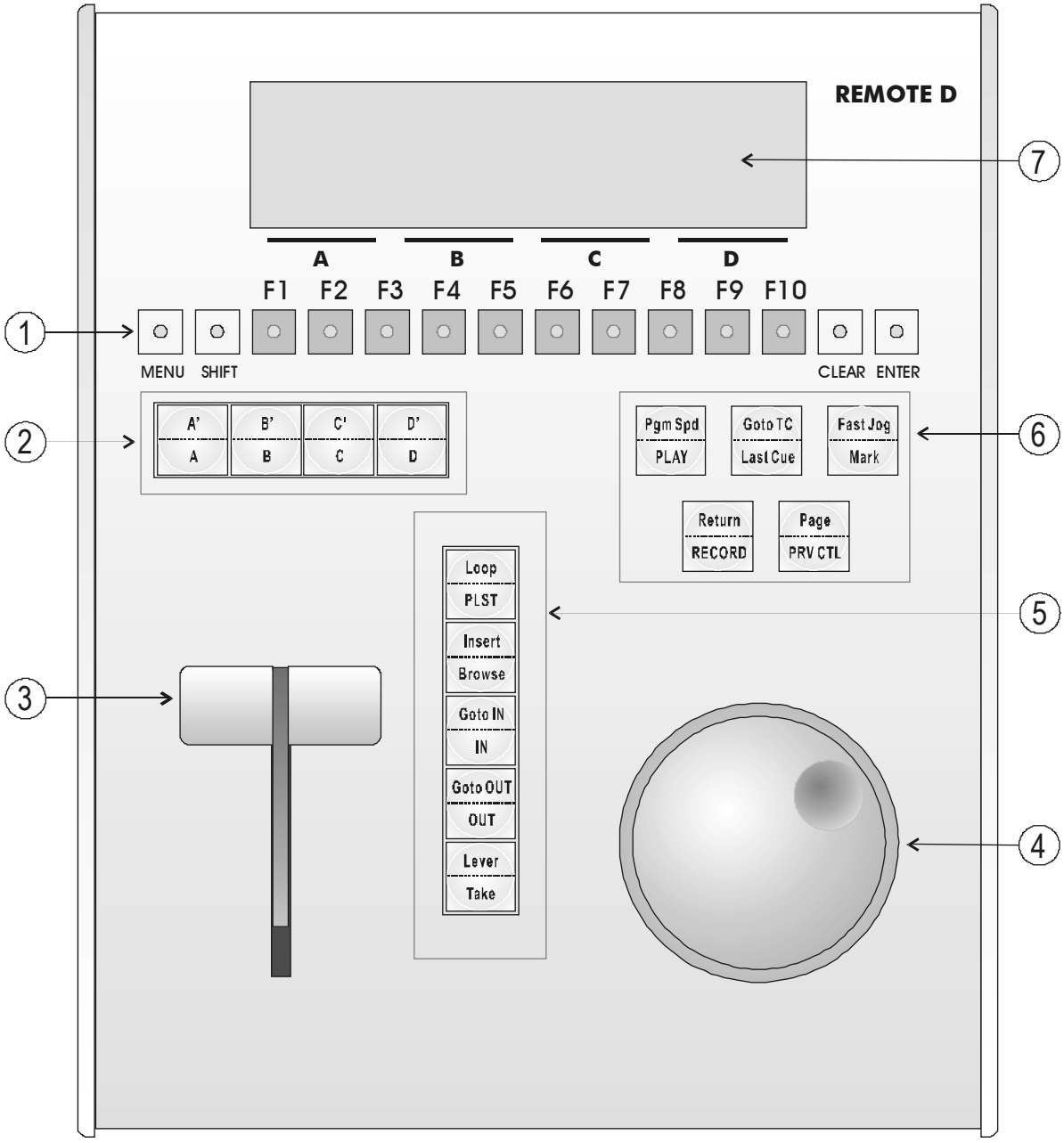


PLAYLIST MODE



Remote controller

The following diagram shows the REMOTE panel along with a brief description of each area.



Note: The operational buttons have PRIMARY and SECONDARY functions and are divided into upper and lower sections. By pressing the SHIFT button you gain access to the secondary functions

1. **F-Keys & small buttons:** multi-purpose keys
2. **SOFT keys:** with LCD display, enables operator to enter MULTICAM MENU system
3. **SLOMO LEVER:** initiates slow-motion and playlist replay
4. **JOG knob:** used to accurately cue disk recorder
5. **Operational block 1:**

PLST	initiates active PLAYLIST
LOOP	This option records the main output (PGM) to the first input (CAM A) of the MULTICAM
BROWSE	to browse the clips, playlists, cue points
INSERT	used in playlist management to insert clips into a playlist
IN	Sets Mark IN at the current position
GO TO IN	Goes to the defined Mark IN
OUT	Sets Mark OUT at the current position
GO TO OUT	Goes to the defined Mark OUT
TAKE	swaps cameras on PGM and PRV monitors
LEVER	change the lever range to secondary mode (see setup menu for range selection)

6. **Operational block 2 :**

PLAY	initiates forward motion
PGM SPD	locks the playback speed to the PGM Speed defined in Setup.
LAST CUE	Re-cues machine to last entered cue
GO TO TC	enables timecode entry, with «F» keys
Fast JOG	used with JOG dial for rapid manual re-cue of disk recorder
MARK	re-usable cue entry, 256 cycling cues
RECORD	initiates “E2E” mode
Return	Allows the operator to go back to the position where he was before recalling/creating a clip.
PRV CTL	enables/disables the Preview Control mode
Page	selects clip page 1, 2, 3, 4 , or clip page 5

7. **LCD Display:** provides current status of system

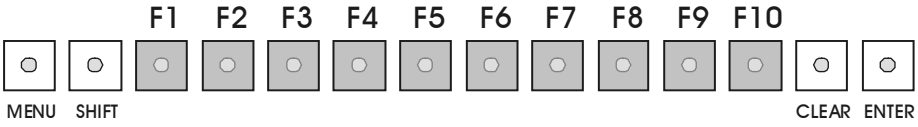
LED COLORS

A selected key lights red.
When a key lights green, it means a value in relation with this key exists.

For example: F1 to F0 keys

- Green light means a clip has been stored in relation with the key.
- Red light means the clip associated to the key is playing or is ready to play.

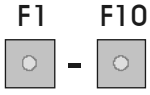
F-KEYS & SMALL BUTTONS



provides access to the Secondary Menu

Note: SHIFT + MENU returns to MAIN Menu

enables use of the secondary key functions



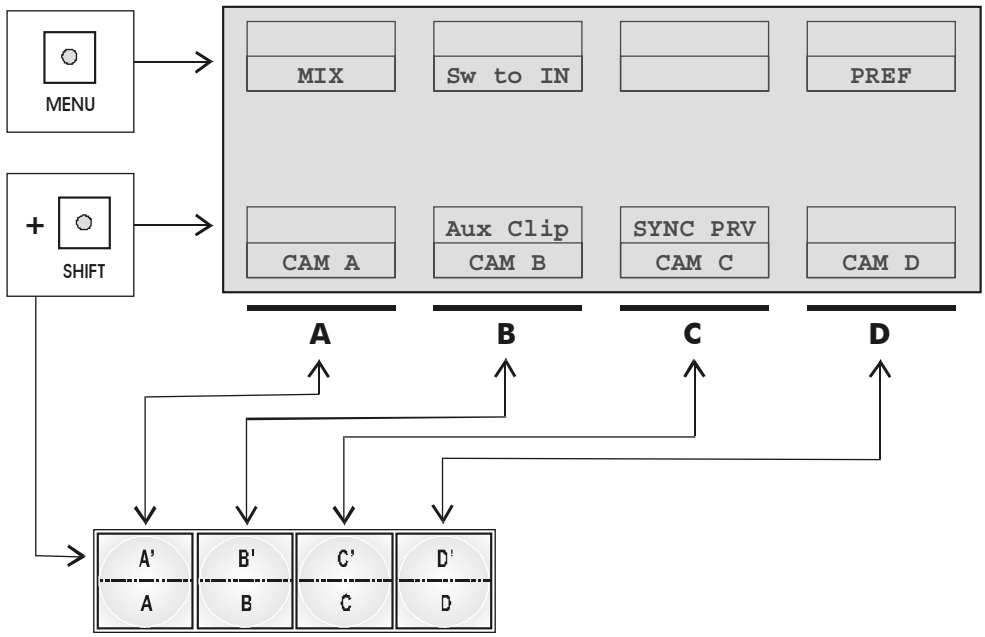
store / recall Clips, recall Playlists and enter Timecode information.

is a multi-purpose key used to clear CLIPS or PLAYLISTS, and to clear IN/OUT points

used to ENTER clips into PLAYLIST, to confirm saving of CLIPS to disk and to validate other options.

SOFT KEYS

The soft keys have PRIMARY and SECONDARY functions and are divided into upper and lower sections.

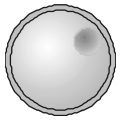


By pressing the SHIFT button you gain access to the secondary functions.

The LCD display is divided in two menus.
To gain access to the upper menu, press MENU from the remote controller.
To return to the operational menu, press the MENU key again.

To return to the MAIN menu of the Multicam, press SHIFT + MENU.

TRANSPORT CONTROLS

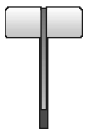


JOG

The JOG allows the operator to pass into SEARCH mode and thus to choose exactly the SHORT OUT or SHORT IN image. Move the JOG clock-wise to search forward and move it counter clock-wise to search backwards. A complete turn of the JOG will produce a jump of approximately 1 to 2 seconds.

Note : The JOG is also used to set parameters in the SETUP menu. Refer to the SETUP menu section for more information.

The JOG dial is active at all times when the system is in PLAY & RECORD



LEVER

The LEVER is used to start a play or to modify slow motion speed. Its run can be of two different types regarding the lever mode.

Normal run:

In this mode, the LEVER run goes from 0 up to 100%.

Second range:

The second range is available to search material from –100% to 100% or form –200 to 200% (see SETUP menu - page 5- F4 for selection)
To gain access to the secondary speed, press SHIFT + LEVER from the remote controller.

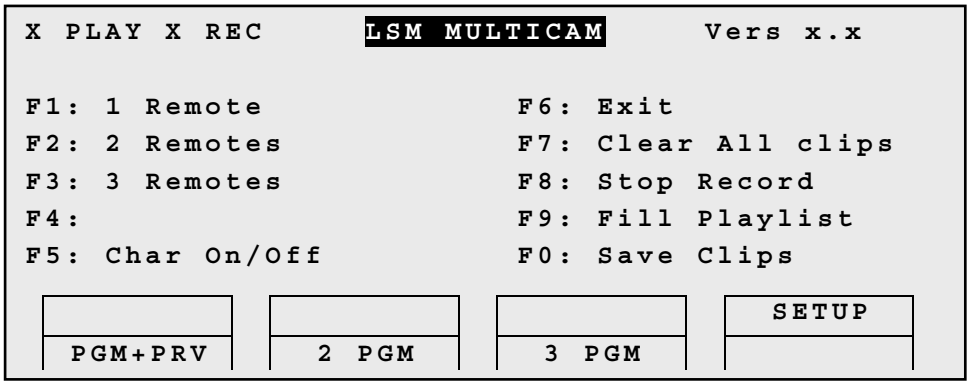
LCD DISPLAY

The MULTICAM menus are displayed on the remote display. Each item can be selected by pressing the corresponding function key (A, B, C, D). Upper items can be selected by pressing SHIFT + corresponding function key.

MENU key is used to come back one menu ahead in the hierarchy. Shift + MENU is used to come back to the main menu.

MAIN MENU

After the boot sequence of the MULTICAM system, the LCD screen of the Remote Control panel will display the MAIN menu.



From any section of the application, press SHIFT + MENU to return to the MAIN menu.

The MAIN MENU has special function key operations as shown above, as well as the «soft» key options to enter 1PGM, 2PGM, or 3PGM modes (if available) and to enter the SETUP menu to configure your remote controller or to add special functions to your application.

Select the corresponding **F**unction key, then press ENTER to validate the selection.

F1: 1 Remote

F2: 2 Remotes

F3: 3 Remotes

If desired, the MULTICAM system can be run using 1, 2 or 3 remotes. Depending on the configuration selected, 1- , 2- or 3- remote mode will be

available from the MAIN menu.

F4: not used

F5: Char On/Off: enables or disables the information display (Timecode, Clip ID,...) on the monitoring outputs.

F6: Exit Exits the MULTICAM software and goes back to the EVS Menu.

F7: Clear all clips Clears all clips. All recorded information will be lost.

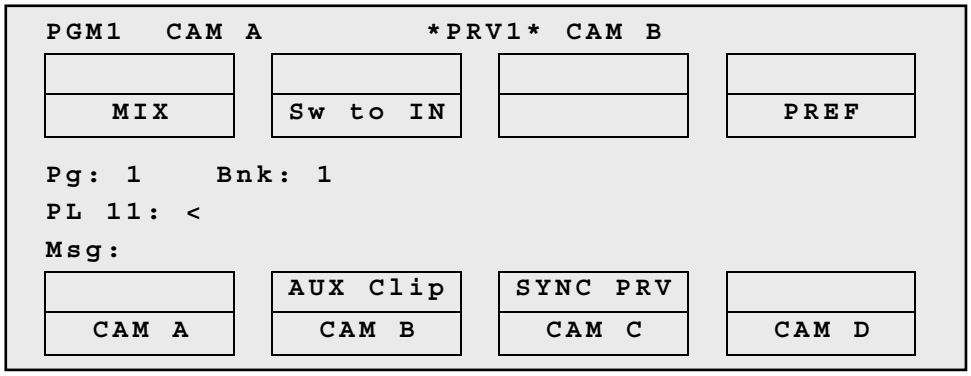
F8: Stop Record Stops the record. The REC key will go off.

F9: Fill Playlist This is a «dump» feature which allows all clips to be «dumped» into the selected playlist. This allows the operator to save all material to tape, as a backup feature after a show is complete. *Make sure the playlist you have selected is an empty one. This function will dump over an existing playlist if that is the one presently selected.*

F0: Save Clips Saves all clips in all banks.

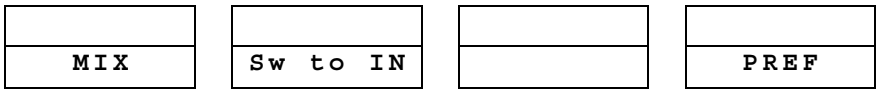
In order to guarantee the validity of data and clips previously saved, it is advised to properly exit the application by pressing <Alt>+ <Q> from the keyboard or <F6> and then <ENTER> from the remote panel.

1 PGM MENU



This mode allows the operator to make replays with/or without transition effects between all outputs. A string of replays can be put together and played back at the operators discretion.

The LCD display is divided in two menus controlled by "soft" keys (A,B,C,D). To gain access to the upper menu, press **MENU** from the remote controller.

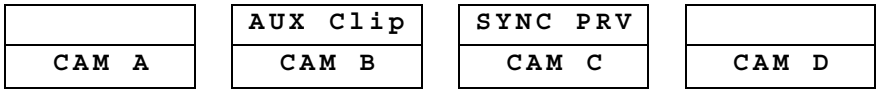


MIX / WIPE: These options determine the transition effect that will occur between the PGM and PRV pictures. The mix and wipe are on the same location. Pressing this button will alternate these effects, showing the active one on the LCD menu. The selected effect will also be the default effect when making a playlist. The duration of the transition effect can be set by the operator in the SETUP menu.

SW to IN : Selecting this function enables the synchronization mode and will synchronize the camera jumps

PREF: Selecting this function enables the Preference mode.

To return to the operational menu, press the **MENU** key from the Remote controller.



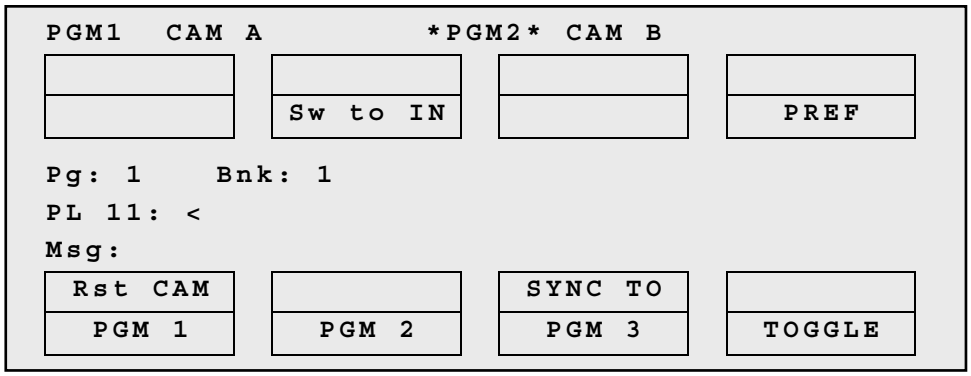
CAM A/ B /C /D: selects the camera on the PGM output.

AUX CLIP:
In Playlist mode, the AuxCLP option allows you to add a new stereo audio track to the original video clips. For example: sport comments, music, jingles, ambiance sound,...

SYNC PRV: (or SYNC TO in Multi-PGM modes)
This option allows you to synchronize the PGM with the PRV output, and then to play them back at the same time.

2 / 3 PGMS MENU

The 2 / 3 PGM mode gives the operator independent control of the two / three outputs. In these modes, all outputs can be controlled together (such as jogging back to a certain action, with all outputs) or they can be controlled individually (either Channel A, B, or C). Here, clips can be stored in one location with an «A»,«B» or «C» clip, or just one of the two / three.

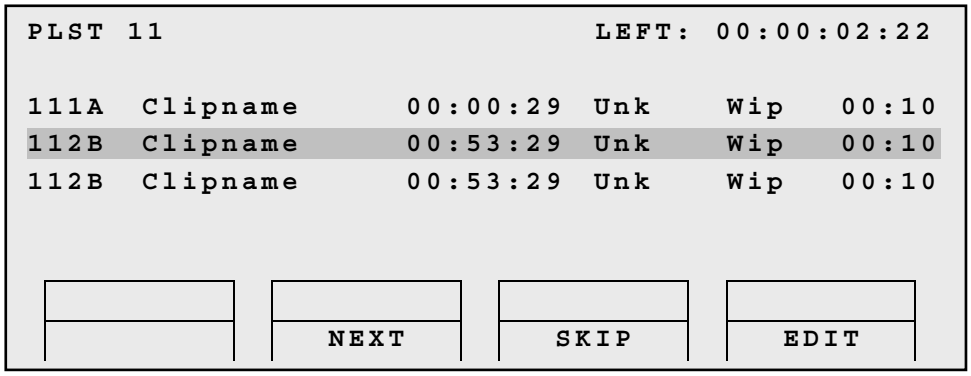


RST CAM:
This function restores the position of cameras on the active channels: CAM A on PGM1, CAM B on PGM2,...

SYNC TO : This button allows you to synchronize the PGM in use with another one. Press this button and then select the PGM to be used as a reference.

TOGGLE / ALL:
Toggle OFF: Selects one PGM and makes the others inactive.
Toggle ON : selects one PGM but does not modify the others
All : selects all PGMs

PLAYLIST MENU



Once the playlist is cued and ready to roll, the above menu is displayed on the remote LCD. This menu gives the operator the ability to manipulate the playlist while it is playing.

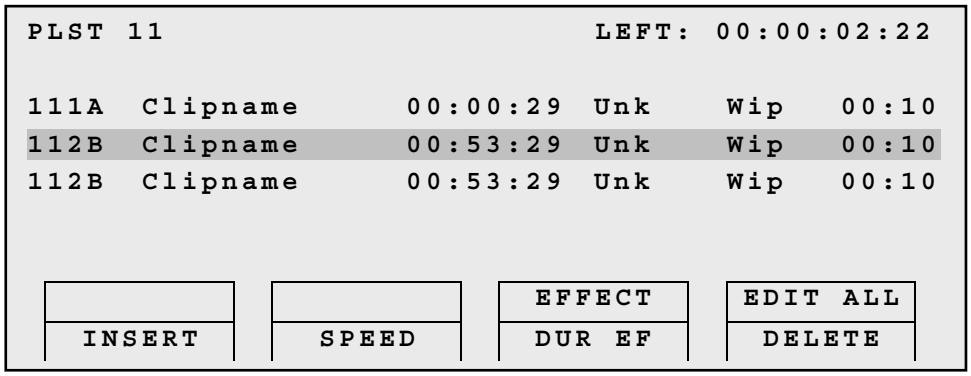
NEXT: While the playlist is rolling on air, selecting this will cause the transition of the next clip with the transition effect listed on the playlist. This can be used if a clip is running too long and it is necessary to shorten up the playing time.

SKIP: While the playlist is rolling, the next clip in the sequence is always displayed on the PRV screen. This function allows the operator to discard clips before they reach the air. The clip that will be «skipped» is that which is seen on the PRV screen (This does not remove the clip from the playlist, it simply allows it to be skipped during playback.).

EDIT: Selecting this function will get the operator back to the «Edit» playlist mode.

PLAYLIST EDITION MENU

Once the playlist is activated, selecting the **EDIT** key allows the operator to use the jog knob to scroll up and down the playlist entries.



As each clip is highlighted, the first frame can be seen on the display monitor. To change any of the options, simply highlight the desired clip, then select from the above menu and use the control lever to adjust to desired point.

INSERT: This allows the operator to insert a clip into the playlist.
(*) The **Insert** function will be available from the LCD screen as soon as a clip has been selected from the banks.

SPEED: Select the playback speed of the clip with the Lever then press ENTER to validate. This can be varied from 0 to 100 %.

DUR EF: This sets the duration time of the transition effect. The default value that initially appears is determined by the value set in the SETUP menu. The effect duration will be occurring prior to the selected clip.

EFFECT: Use this to select the type of transition effect (Mix/Wipe) Move the lever to set the type of effect, when **Effect** is highlighted.

EDIT ALL: Selecting this, followed by one of the playlist parameter options (speed, effect, duration effect) will allow the operator to edit ALL the clips in the list at one time.

DELETE: This allows the operator to quickly edit a playlist by removing the selected clip. The clip that has been «cut» can then be inserted into another location. This clip is displayed on the second PRV output, and a * sign appears beside the clipname.

REMOTE PANEL OPERATIONS

RECORD:
This key lights «red» when the system is in operation; at this time the input signal is recorded, and played back at full speed.

RETURN
This function allows the operator to come back to the position where he was before recalling a clip. This command allows the operator to come back to a previous position, without using the RECORD key and the JOG KNOB.

PLAY :
Initiates forward motion. Can also be used to commence playback of playlists and clips; refer to PLST command.

PGM SPD (PROGRAM SPEED) :
When selected, the PGM SPD/PLAY button will flash red. Selecting a clip or playlist and hitting PLAY will now roll the video at the «Program Speed» that is set in the SETUP menu. So if 33% is your default speed here, the clip or playlist will roll at that speed. Hitting SHIFT + PGM SPD again will disable this function.

LAST CUE :
Re-cues machine to last entered cue, pressing again will re-cue to the previously marked cue etc.

GOTO TC :
This function is used to jump to a particular time code. Use the function keys F1 to F10 to enter the desired time code (6 digits : hh:mm:ss are displayed on the LCD screen of the Remote). After the 6th digit is entered, the MULTICAM will automatically go to the required time code. If the last digits are 0 (zeros), you do not need to enter them. Press ENTER on the remote to validate the entry and reach the desired video.
Confirmation of correct TimeCode entry can be observed on the display of

the Remote LCD screen and on the monitoring output. This TimeCode display appears in the center of the LCD display, just above the menu options. If a "Beep " is heard, the selected TimeCode frame does not exist on disk any longer.
If you enter the TimeCode incorrectly, press CLEAR to exit this mode.

MARK :
Marks up to 256 cues that can be marked while recording / playing. The cues are always marked on the LIVE and PLAYBACK program.

FAST JOG :
When selected enables FAST picture search. The actual speed of this fast jog is adjustable in the SETUP menu.

PRV CTL
Controlling both PGM and PRV is done when **PRV CTL** (direct access key from the remote) is not activated.

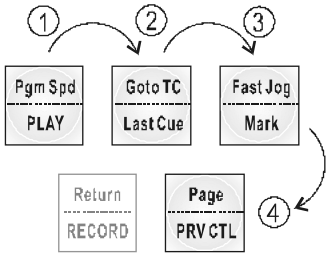
Once selecting **PRV CTL** the operator will have control of the PRV with the jog knob and most buttons, and the lever and the Play button will control the PGM output.

PAGE
Selects clip page 1, 2, 3, 4 or clip page 5.
LCD display shows a selection menu, hit F-Key to select the page, and press ENTER to confirm.

REBOOTING THE SYSTEM FROM REMOTE PANEL
(«HARD REBOOT»)

In the event that the system needs to be rebooted, the process can be accomplished from the remote panel.
Keep in mind, doing this will DELETE ANY CLIPS THAT WERE NOT SAVED..

To reboot, press the following key sequence,



Between phase 3 and phase 4, the RECORD button will flash GREEN and the PAGE button will flash RED. Hitting the PAGE button will reboot the system.

«Soft Reboot» from the keyboard

It is also possible to run a «soft reboot» which will exit the software and return the user to the EVS Menu. Here, the software can be selected and entered again without having to reboot the entire system. When running the following procedure, the system will automatically run a save clips upon exit.

Hit **ALT + Q** on the keyboard, and confirm with **ENTER** or cancel with **ESC**. You will exit the MULTICAM software and go back to the EVS Menu.

PLST :
Selects the active PLAYLIST, once a playlist has been compiled. To play back a playlist that has been cued, press the PLAY button and it will roll at the set speeds.

LOOP :
Select this option, the button will flash RED when in this mode, and roll the playlist. The playlist will be recorded onto the disk. (Channel 1 – CAM A).
Exit the playlist mode and go back to LIVE record. Simply jog back and you will see the playlist recorded with all its transitions and at the speed they were played. Now it can be stored as one big clip (This can be useful if some of the 50 playlist locations need to be made available).

BROWSE :
In Playlist mode this function allows to browse from clip to clip within the playlist. Each time the JOG KNOB is turned, the first image (SHORT IN) of the corresponding clip is displayed on the screen.

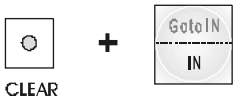
INSERT :
In Playlist mode this function insert a clip *before/after* the current clip of the selected playlist. See “Insert in Playlist” option in the SETUP menu – Page 2 – F4)

IN :
Defines the «IN» point of a clip. This key lights GREEN if an «in» point exists but is not the image you see and the key illuminates RED if the «on-air» image is at this «in» point. This point can be entered while recording.

OUT :
Defines the «OUT» point of a clip. This operates with the **IN** button.

Modification of CLIP IN / OUT points:

Select the clip that you wish to modify, use the JOG dial to position the material at the new IN or OUT point, and re-mark the **IN** or **OUT** point(s) as required.



When IN/OUT points are set, the system automatically write protects a user definable length of material before and after the IN/OUT points respectively, these are referred to as the GUARDBANDS. This can be set in the SETUP menu under «Guard bands» (page 2 – F2) as required.

USEFUL FACILITY : When in CLIP mode

This enables the operator to go to IN / OUT points of CLIPS, instantly!

TAKE :
Swaps cameras on PGM and PRV monitors or PGM1 and PGM2 monitors.

LEVER:
Used to perform slow-motion from 0 - 100%, and to playback material from –100 to –100% or from –200 to + 200% when Sec Lever range is selected

SET-UP Menu

The SET-UP menu allows the operator to set parameters regarding some functions. The new parameters are saved when exiting the Set-up menu.

Prior to using the MULTICAM, the operator should enter the SETUP menu and set all necessary parameters. If clips are stored with certain parameters and the operator wishes to change them after the fact, those clips will not change. Thus, it is important to set these parameters first.

To access the SET-UP menu

Press SHIFT+ MENU key to return to the MAIN menu,

			SETUP
1PGM+PRV	2 PGM	3 PGM	

then press SETUP (SHIFT + D) to enter the SETUP menu.

The MULTICAM software has six menu pages once in the **SET-UP** mode.

To select and to modify parameters

Adjustments are made as follows:

- Select the MENU page, using **F9** (Page Down) / **F10** (Page Up) as necessary.
- Choose the parameter to be modified by pressing the **F**unction keys & make adjustment by rotating the JOG knob.
- To restore the default value of a parameter, press **CLEAR** and the corresponding **F**unction key.
- To **QUIT** set-up mode, press **MENU**

```
Setup Page 1          Clear+F_Key :Restore Dft
F1 : Effect duration           : 0s10fr
F2 : Wipe Type                 : Vert L>R
F3 : Genlock Error msg         : Yes
F4 : Playlist loop             : No
F5 : Preroll                   : 0s10fr
F6 : Paint/Target transition   : 0s08fr
Page down (F9) Page up (F10) Quit (Menu)
```

Effect Duration:
Sets the duration of transition effect. Used as default value in playlist. (0s05fr to 20s00fr)
Default : 0s10fr

Wipe Type:
Chooses from Vert (L>R, R>L), 45 UP (L>R, R>L) and 45 DN (R>L, L>R)
Default : Vert (L>R)

Genlock error messages:
(Yes / No) Enables or disables the Genlock information on the monitoring output.
Default : Yes

Playlist Loop:
Allows playlist to loop and replay continuously. (YES/NO)
Default : NO

PreRoll:
(0s01fr to 4s05fr) Pre-roll for automatic cues
Default : 0s10fr

Paint/Target Transition:
Sets (0s01fr to 3s10fr) Controls dissolve effect for paint and target keyer.
Default : 0s10fr

```
Setup Page 2              Clear+F-Key :Restore Dft
F1 : Fast Jog                    : 20x
F2 : Guardbands                  : 04s05fr
F3 : Pgm speed                   : 050%
F4 : Insert in Playlist          : After
F5 : Default Plst Speed          : Unk.
F6 : Default clip duration       : 01s20fr
Page down (F9) Page up (F10) Quit (Menu)
```

Fast Jog:
Sets the increment of the jump when in Fast Jog mode. (2 to 20 times)
Default : 20x

Guardbands:
The amount of «guard-band» before and after clips. (from 00s01fr to 50s00fr)
Default : 04s05fr

Pgm Spd:
(1 – 100%) during playback, selecting SHIFT+ PLAY then rolling a selected clip will roll that clip at this predefined speed.
Default : 050%

Insert in Playlist:
Selects the mode for «INSERT» function of playlist.
(before/after)
Default : After

Default Plst Speed:
Default speed used for clips entered into playlist (from 1% to 100%).
Default : Unknown

Default Clip Duration:
Sets the duration of clips created with only IN point or only OUT point. (00s01fr to 10s00fr)
Default: 01s20fr

```
Setup Page 3          Clear+F-Key :Restore Dft
F1 : Make clip for cam A       : Yes
F2 : Make clip for cam B       : Yes
F3 : Make clip for cam C       : Yes
F4 : Make clip for cam D       : Yes
F5 : Mute Slow motion          : Yes
F6 : Split Screen Tracking     : No
Page down (F9) Page up (F10) Quit (Menu)
```

Make Clip for CAM A :
(YES / NO) selects the camera(s) saving clips. When creating clips, the clip corresponding to the on-air camera is always saved. It is possible to save automatically the same action on the other cameras.
Default : YES

Make Clip for CAM B :
(YES / NO) selects the camera(s) saving clips.
Default : YES

Make Clip for CAM C :
(YES / NO) selects the camera(s) saving clips.
Default : YES

Make Clip for CAM D :
(YES / NO) selects the camera(s) saving clips.
Default : YES

Mute Slow Motion :
(Yes/No). Enables or disables the slow motion of audio track.
Default : No

Split Screen Tracking:
(Yes/No). Enables or disables the tracking inside the Split Screen effect.
Default : No

```
Setup Page 4          Clear+F-Key :Restore Dft
F1 : Set color            : Cursor
F2 : Color                : White
F3 : Custom Y             : 240
F4 : Custom U             : 128
F5 : Custom V             : 128
F6 :
Page down (F9) Page up (F10) Quit (Menu)
```

Set color :
(Cursor / Wipe / Split) Applies the default color to a specific tool: to the cursor, to the border of the wipe effect or to the delimiter of the split screen.
Default: Cursor.

Color:
(white, black, custom) defines the color to assign to the cursor / wipe / split. Default: white

Custom Color : (*)
F3, F4, and F5 are used to set the border color for the split screen, the wipe effect and the cursor

Custom Y :
(0 – 360)
Default : 240

Custom U :
(0 – 128)
Default : 128

Custom V :
(0 – 128)
Default : 128

```
Setup Page 5          Clear+F-Key :Restore Dft
F1 : Mark Cue points       : Live
F2 : Load Playlist         : Always
F3 : 2nd Lever range       : -100% <-> +100%
F4 : Lever engage mode     : Direct
F5 : Recall clip toggle    : Off
F6 :
Page down (F9) Page up (F10) Quit (Menu)
```

Mark Cue Points:
(Live/Playback)
Live: memorizes cue points into the live (E2E)
Current: memorizes cue points into Live and also into Search mode
Default: Live

Load Playlist:
(Always/Conditional)
Always: loads the selected playlist to PGM1 and PRV to PGM2
Conditional: allows you to load different playlists on each PGM.
Default: Always

Secondary Lever Range:
The T-Bar lever can be used in normal mode: to play back clips at slow motion speed from 0 to 100%. Or secondary range is available to search material from –100% to 100% or from –200% to 200% speed. To gain access to the secondary speed from the remote controller, press SHIFT + LEVER.
Default: –100% to +100%

Lever Engage mode:
(Direct / Current speed)
The speed variation depends on the position of the T-Bar lever.
In Direct mode, the variation of the speed is from 0% (low position) to 100% (high position).
In Current speed mode, the Multicam keeps the speed of the current clip in memory and re-sample the course of the T-bar lever.
Default: Direct

Recall clip toggle:
(ON/OFF)
This option allows the operator to select the clip saved to banks through the Function keys. Pressing several time the F key selects clip from CAM A, CAM B, CAM C or CAM D.
Default: OFF

```
Setup Page 6          Clear+F-Key :Restore Dft
F1 : 2nd Remote           : EVS Remote
F2 : 3rd remote           : EVS Remote
F3 :
F4 :
F5 :
F6 :
Page down (F9) Page up (F10) Quit (Menu)
```

Second Remote:
(EVS Remote / SONY Protocol)
This option allows the operator to select the type of controller for second user.
Default: EVS Remote

Third Remote:
(EVS Remote / SONY Protocol)
This option allows the operator to select the type of controller for the third user.
Default: EVS Remote

Basic Operation

1PGM/PRV mode

Live, Search, Playback: the Control Modes

The MULTICAM can be set in three different basic modes, depending on commands used.

LIVE (E2E) MODE

This mode which is selected at start-up can also be selected by pushing the RECORD key. The MULTICAM records the input signal and plays it at the same time on the program output.

SEARCH MODE

This mode is selected by moving the JOG.
In this mode, the operator has the opportunity to search for an image, in order to define CUE points or clips. Moving the JOG clockwise will force the MULTICAM to search forward, moving the JOG counter clockwise will force it to search backwards. The most important thing to note is that the MULTICAM never stops recording while searching.

PLAYBACK MODE

This last mode is selected by moving the LEVER or pressing the PLAY key.
The MULTICAM plays in slow motion the incoming signal, plays back a clip or a playlist and of course continues to record the incoming signal on disks.

As soon as the lever is moved, the MULTICAM starts playing back from current picture. The playback speed is defined by the lever position. This is used to start the playback of a normal slow motion, as well as the playback of a clip or a playlist. During playback, the system never stops recording

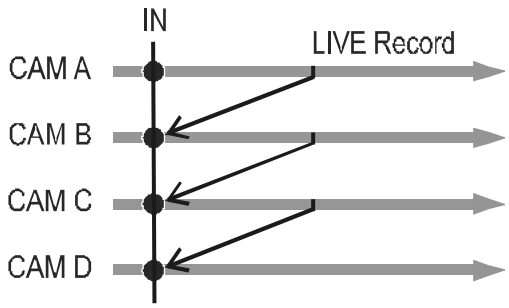
Each operation on the REMOTE panel with the JOG or LEVER will be associated to the SEARCH or PLAYBACK mode respectively.

PREVIEW CONTROL

Controlling both PGM and PRV is done when **PRV CTL** (direct access key from the remote) is not activated.

Once selecting **PRV CTL** the operator will have control of the PRV with the jog knob and most buttons, and the lever and the Play button will control the PGM output. At this point, selecting clips will call them up on the PRV side.

USEFUL Facility:
The combination of the PRV CTRL and the SW to IN allows the operator to auto-chain cameras from the same IN point.



When an IN point has been marked, the operator activates the PRV CTL and sets OFF the SW to IN option. Then the slow motion of one camera

can be started from this IN point. The operator selects another camera in the PRW output and, via the TAKE button, can auto-chain cameras from the same IN point on the PGM output.

TAKE BUTTON - SWAPS PGM/PRV WITH CURRENT EFFECT

This command rolls the PRV to the PGM with the selected transition. The replay will roll at the same speed as the speed on the PGM side.

Try this

1. Create several clips.
2. Select one clip by pressing the corresponding F-Key. This first clip is loaded to the PGM1 output.
3. Activate the PRV CTL command. The key lights red. LEVER CTL appears on the PGM1 monitoring output and FULL CTL appears on the PRV monitoring output.
4. Move the LEVER to take control of the PGM1 channel and to start the playback.
5. Select a second clip. The clip is loaded to the PRV output.
6. Press TAKE to swap PGM1 and PRV, and to play back the second clip.
7. Select a third clip and repeat the operation to chain several clips with transition effect.

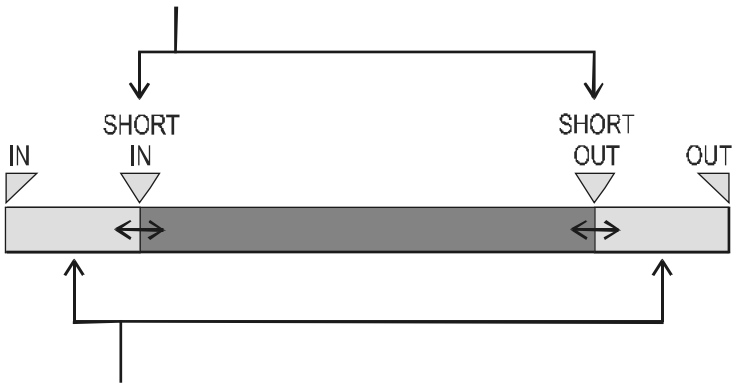
Clips

IN/OUT & SHORT IN/OUT POINTS

A clip is created with SHORT IN and SHORT OUT points. When SHORT IN and SHORT OUT points are set, the system automatically write protects a user definable length of material before and after the SHORT IN/OUT points respectively, these are referred to as the GUARD-BANDS.

It is possible to trim a clip by re-creating SHORT IN and SHORT OUT points.

If SHORT IN and SHORT OUT points are defined, only the fields between those two points will be played if the sequence is recalled (the same applies when the sequence is included in a play-list).



Fields between IN and SHORT IN and fields between OUT and SHORT OUT (**GUARD BANDS**) can be reached with the JOG. So the SHORT IN and SHORT OUT points can be redefined.

HOW TO CREATE A CLIP?

1. Select the LIVE mode
2. Use the JOG knob to go in search mode and define your SHORT IN or SHORT OUT point.
3. Press the IN key to mark your SHORT IN point of the clip.
4. Search the SHORT OUT point and then press the OUT key to mark it also.

A clip can be created with only IN point or only OUT point. The system will

automatically give duration to the clip according to the default duration defined in the SETUP MENU. (Page 2 – F6 – Default Clip Duration)

HOW TO STORE A CLIP?

1. Create a clip by marking IN and OUT point

2. Select the location of the clip to store and press the corresponding F key. The Led lights green.

Once a clip is stored, it is safe from being overwritten. But this does not mean that it is SAVED. If power is lost, the clips are lost. To save ALL clips, enter the MAIN MENU and select F0, Press ENTER to validate. ALL clips and ALL playlists will now be saved. Exiting the software (ALT+Q) will also save the clips and playlists.

HOW TO CHANGE PAGE/BANK?

1. Create a clip by marking IN and OUT point

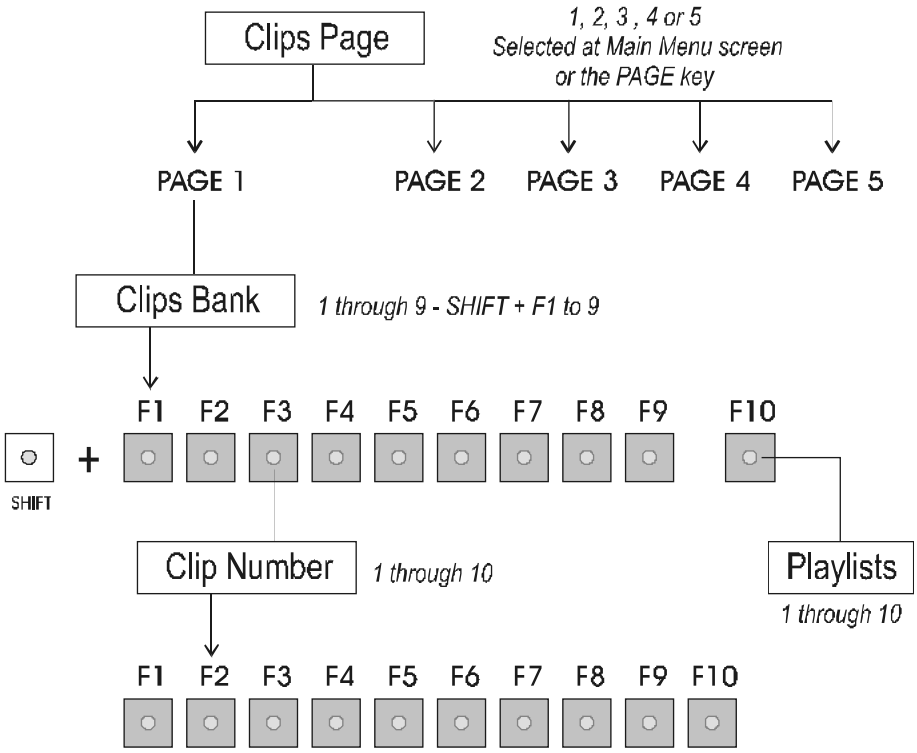
2. Select the clip page (PAGE 1 contains clips 110 to 199, PAGE 2 contains clip 210 to 299, and so on) by pressing SHIFT + PAGE

3. Then select the BANK where the clip will be stored by pressing SHIFT + F keys i.e. Bank n°3 press SHIFT + F3
   Bank n°7 press SHIFT + F7

4. Now select the location of the clip to store and press the corresponding F key
   i.e. clip n°112 SHIFT + F1 (to select bank n°1) then F2 (to select location nr 2).

The MULTICAM can store up to 450 (multiply by the number of cameras) clips and 50 playlists in its libraries

This flow chart represents the hierarchy of the MULTICAM clip numbering system. As an example, clip number "112" is used:



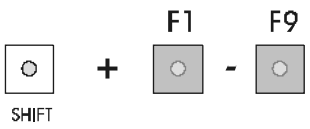
HOW TO RECALL A CLIP?

Recalling a clip can be done by using the remote control panel as described previously or through the VGA screen

USING THE REMOTE

1. Select the CLIP PAGE 1, 2, 3, 4 or 5 (PAGE key).

2. Select the BANK in which the desired CLIP is located (SHIFT + F1 - F9).



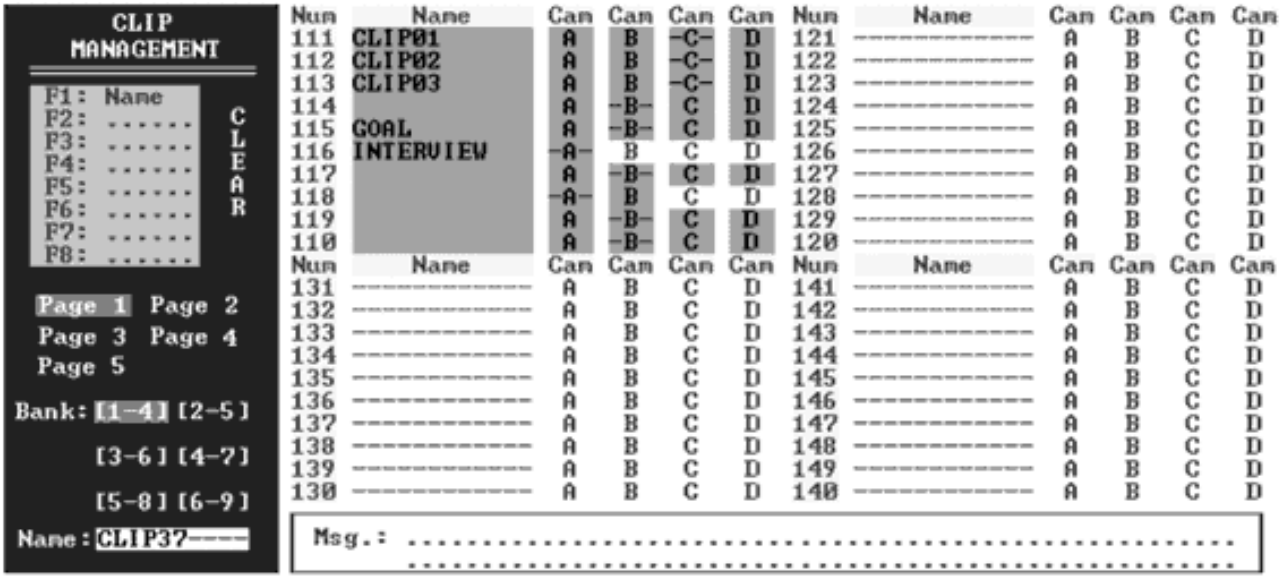
3. Choose the CLIP required (**F1 - F10)**.

If all clips are present (from Camera A, B, C and D), they will appear in their respective locations (Channel A, B, C or D). Hitting the Function key again will swap them. When the operator is controlling only one channel (such as with **PrvCtl**), the clip will appear at that location only. In the case of a single clip (only an «A», «B», «C» or «D» clip), when in full control of all outputs, the clip recalled will appear on the PGM side.

USING THE VGA/KEYBOARD/TABLET

The VGA clip screen is accessed by selecting the **F9** key on the keyboard. In this mode, clips can be recalled using the pen and tablet or directly from the keyboard.

The page is set up with 9 columns, displaying each CLIP BANK (1-9). The operator can also select the CLIP PAGE on this screen. Simply use the pen to select the desired clip. If a clip is present in a certain location, it will be highlighted in BLUE. Once selected, it will become RED.



The keyboard can also be used to maneuver within the clip screen. The arrow display (> <) is used as the guide to illustrate where the «cursor» is currently located. The arrow keys on the keyboard allow movement left and right across the screen (only 2 banks can be seen at one time) or up and down within the bank. Once at the desired clip, hitting ENTER will call the clip on the monitor.

You can gain immediate access to a clip by typing its ID number on the keyboard. For example, when you type "119", the MULTICAM will detect that this is the format of a clip ID and the corresponding clip is recalled

automatically.

The numbers at the bottom are used with the pen to select which 2 banks will be displayed on the screen. Again, the current view will be designated by the RED highlight around the number. Here it would be [1-2]. The Clip Page can be selected here with the pen as well.

The CLEAR option on this page allows the operator to delete a clip. This is useful for removing a clip if, for example, both an «A» and «B» were made when only «A» was desired. Select CLEAR, and then use the pen to select the clip you wish to delete.

When on this screen, the keyboard can also be used to manipulate the clip selection:

KEYBOARD FUNCTIONS:

Arrows keys (←,↑,↓,→) : Selects any clip on your screen.

Enter : Selects the clip desired (><) and call it to the monitor

Page up / Page down : Selects Clip Page 1, 2, 3, 4 or 5

Ctrl ← / Ctrl →: Modifies the displayed banks ([1-2], [2-3], [3-4] [4-5], [5-6], [6-7], [7-8], [8-9])

F1 : Names a clip

Del + Enter : Clears the selected clip

HOW TO NAME A CLIP?

Within the clip management screen or within the playlist screen, choose the clip to name by either using the pen and selecting or positioning the arrow with the keyboard to the desired clip or simply type the name on the keyboard.

1. To clear the whole string, press **ESC.**
2. Hit **F1** on the keyboard to validate. The clip is now named.
3. To erase the last character, press < Backspace >

Repeat as needed for all clips. This can be done at any time.

HOW TO CLEAR A CLIP?

Choose the appropriate BANK where the CLIP to be erased is stored.

1. Press **CLEAR,** followed by **F1 - F10,** as required.

2. Press **ENTER** to confirm and the selected CLIP will be erased.

The clip to be erased cannot be selected prior to clearing it. It must be a clip that is not currently activated (the function key must be GREEN).

HOW TO COPY A CLIP?

1. Select the original clip

2. Then select an empty location

3. And press ENTER to confirm or MENU to cancel.

With this function, you can have different IN and OUT points for a same original clip / action.

When a CLIP is copied, the whole CLIP, including the GUARD - BAND is copied. The IN / OUT points of this copied CLIP will be set at the start / end of the original front / rear guard-bands respectively. New IN / OUT points will thus have to be marked, as required, for the revised CLIP.

HOW TO ERASE A CLIP ON ALL CAMERAS?

1. Within the CLIP banks from the VGA screen, select the clip to erase by using the arrow keys with the keyboard. Make sure the cursor encloses the NAME area of the clip.

2. Press the DEL key on keyboard, the CLEAR on the VGA screen is highlighted and blinking. Then press ENTER to validate.

HOW TO ERASE A CLIP ON ONE CAMERA?

1. Within the clip screen, select the clip to erase on camera A, B, C or D by using the arrow keys with the keyboard.

2. Press the DEL key on keyboard, the CLEAR on the VGA screen is highlighted and blinking.

3. Press ENTER to validate. The selected clip is erased on the selected camera only.

A clip can not be deleted while it is on air. When a clip is deleted, all playlists are scanned and that clip is removed from all of them.

HOW TO SHORTEN A CLIP?

1. Recall the defined clip by pressing the corresponding F key.

2. Move the Jog in order to go into SEARCH mode and define your SHORT IN point.

3. Press the IN key to mark a new SHORT IN point.

4. Move the Jog to define your SHORT OUT point.

5. Press the OUT key to mark a new SHORT OUT point.

6. Recall the defined clip by pressing the corresponding F key. The clip jumps on the new SHORT IN point.

7. Move the LEVER to go into SLOW mode and play the clip. The SLOW MOTION will stop at the new SHORT OUT point.

GOTO IN AND GOTO OUT

You can use GOTO IN and GOTO OUT function to jump immediately onto SHORT IN or SHORT OUT cue respectively.

HOW TO CLEAR ALL CLIPS ?

1. Go to the Main Menu (SHIFT + MENU)
2. Press the function key **F7** on the remote.
3. Press ENTER or CLEAR on the remote panel to confirm or cancel the operation. A message on the video monitor will notice the operator.

HOW TO SAVE ALL CLIPS ?

1. Go to the Main Menu (SHIFT + MENU)
2. Press the function key **F0** on the remote to save clips.

IT IS RECOMMENDED TO SAVE CLIPS REGULARLY.

Playlist

HOW TO MAKE A PLAYLIST?

You will see that a PLAYLIST can be made very quickly. The experienced operator can include a CLIP at the end of the PLAYLIST containing material that happened seconds before the PLAYLIST is transmitted.

1. Choose first clip for your PLAYLIST
2. Then press **ENTER**
3. Repeat as necessary until last CLIP is entered.

When the MULTICAM is first switched on, the active PLAYLIST will automatically be PLAYLIST 11.

The remote display gives all needed information regarding this playlist and this information is updated each time a clip is stored in a playlist.

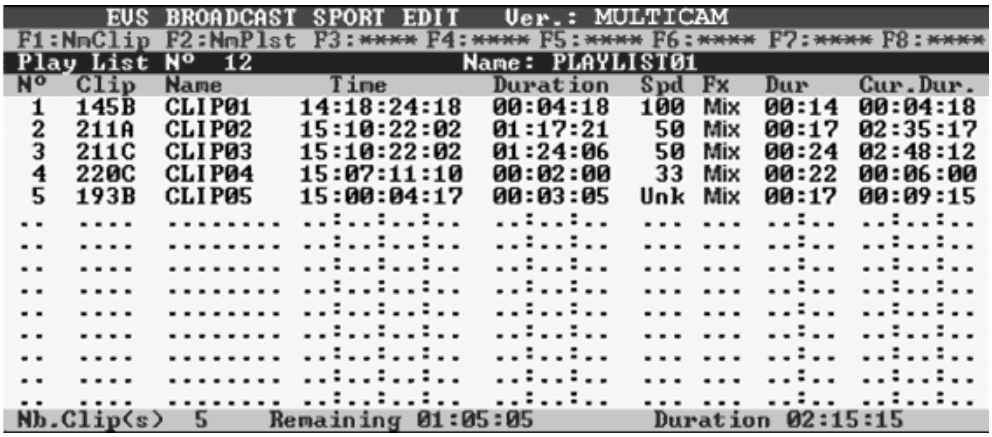
HOW TO SELECT A PLAYLIST?

1. To activate another PLAYLIST, go to PLAYLIST bank (SHIFT + F10)
2. Select PLAYLIST as required (press F1 - F10)

PAGE 1 contains Playlists 10 to 19, PAGE 2 contains 20 to 29,... and PAGE 5 contains Playlists 50 to 59

VIEWING THE VGA PLAYLIST SCREEN

The VGA playlist screen can be accessed by selecting **F10** on the keyboard.



EVS BROADCAST SPORT EDIT Ver.: MULTICAM

F1:NmClip F2:NmPlst F3:**** F4:**** F5:**** F6:**** F7:**** F8:****

Play List Nº 12 Name: PLAYLIST01

Nº	Clip	Name	Time	Duration	Spd	Fx	Dur	Cur.Dur.
1	145B	CLIP01	14:18:24:18	00:04:18	100	Mix	00:14	00:04:18
2	211A	CLIP02	15:10:22:02	01:17:21	50	Mix	00:17	02:35:17
3	211C	CLIP03	15:10:22:02	01:24:06	50	Mix	00:24	02:48:12
4	220C	CLIP04	15:07:11:10	00:02:00	33	Mix	00:22	00:06:00
5	193B	CLIP05	15:00:04:17	00:03:05	Unk	Mix	00:17	00:09:15

Nb.Clip(s) 5 Remaining 01:05:05 Duration 02:15:15

HOW TO RECALL A PLAYLIST?

1. The active PLAYLIST can be selected by pressing **PLST**

The first time this is pressed, the Playlist Edit mode will be entered. Here, the operator will see the first frame of the highlighted clip within the playlist appear on the PGM output but the PRV side will still display the same output. At the start, full control will be of the PGM side; scrolling through the playlist can be done here.

2. Press **PLST** again and the Playlist mode is entered: the first frame of the clip following the one on the PGM will be displayed on the PRV side. This allows the operator to play only part of the playlist, starting from current position.

3. A third selection of the **PLST** button cues the playlist to the beginning, displaying the first clip on the PGM side and the following clip on the PRV.

When a playlist is activated, there will be a new menu display that will appear on the LCD of the remote.

Editing the Playlist in Playlist diffusion mode is not possible. Press the EDIT function to return to the Playlist Edition mode and perform the editing

HOW TO NAME A PLAYLIST?

Each of the 50 playlists can now be given a name. On the playlist screen, you will notice that **F2** shows «NmPlst».

1. Type the name on the keyboard. The name will appear in the lower right corner of the VGA screen, next to the "**Name**" label.

2. When the name is completed, press **F2** to validate. The name of the playlist is shown in the center of the 3rd line of the screen.

HOW TO ROLL A PLAYLIST?

Once the playlist is cued and ready to roll, the above menu is displayed on the remote LCD. This menu gives the operator the ability to manipulate the playlist while it is playing.

1. Select the playlist bank by pressing Shift + F0 keys.

2. Select the playlist to play back by pressing the corresponding F key. This key turns red.

3. Press the PLST key on the remote panel.

4. Move the lever to start the playback

5. Press again the PLST key to re-start the playback.

While the playlist is rolling on air, select the **NEXT** button to jump to the next clip, or select the **SKIP** button to discard clips before they reach the air.

HOW TO EDIT A PLAYLIST?

Once the playlist is activated, selecting the **EDIT** key allows the operator to use the JOG KNOB to scroll up and down the playlist entries.

As each clip is highlighted, the first frame can be seen on the display monitor. To change any of the options, simply highlight the desired clip, then select from the above menu and use the control lever to adjust to desired point.

Select the **EDIT** button to enter the Playlist edition mode.

BROWSE WITHIN THE PLAY LIST

1. Press BROWSE on the remote panel. The corresponding button lights red.

2. Use the JOG KNOB to browse within the playlist. The current clip is updated (look at the remote display) and its first field is displayed on the output monitor. On this monitor, the number of clips in the playlist and the current clip are displayed in the lower part of the screen.

INSERT A CLIP AT A DEFINED POSITION IN THE PLAY LIST

1. Select a clip in the banks. The corresponding F-Keys lights red.

2. Browse in the playlist / scroll to the location for insertion of clip.

3. Press INSERT to add the selected clip to the playlist. Depending on what is selected in the SETUP menu, the clip will be inserted **before or after** this highlighted clip. (Refer to SETUP Menu – Page 2- F4)

The INSERT function will be available from the LCD screen at location Shift B as soon as a clip has been selected from the banks.

DELETE A CLIP IN A PLAY LIST

1. While in **EDIT** mode, scroll within the playlist to the clip that needs to be deleted. Again, the first frame will appear on the display as each clip is scrolled through.

2. When the CLIP to be removed is located, select DELETE from the playlist Edit Menu. Selected CLIP will be removed from PLAYLIST

In Playlist mode the CLEAR button removes the last clip at the end of a playlist. This command is confirmed by ENTER.

MODIFY THE DURATION EFFECT, THE TRANSITION EFFECT AND THE PLAYBACK SPEED OF A CLIP IN A PLAYLIST:

1. Browse in the playlist and select the clip you want to modify

2. Press DUR EFF (Soft Key: C)

3. Move the LEVER to set the duration time.

The default value that initially appears is determined by the value set in the SETUP menu. The effect duration will be occurring prior to the selected clip.

4. Press EFFECT (Shift + C)

5. Move the LEVER to select the type of transition effect (Mix/Wipe)

6. Press SPEED (Soft key B)

7. Move the LEVER to select the playback speed. (from 0 to 100%)

8. Press PLST key to return to the Playlist mode and to play back the Playlist modified.

APPLY MODIFICATIONS TO ALL CLIPS IN A PLAYLIST:

1. Press EDIT ALL (Shift + D)

2. Selecting this, followed by one of the playlist parameter options (speed, effect and duration effect) will allow the operator to edit ALL the clips in the list at one time.

HOW TO NAME A PLAYLIST?

Each of the 50 playlists can now be given a name. On the playlist screen, you will notice that **F2** shows «NmPlst».

3. Type the name on the keyboard. The name will appear in the lower right corner of the VGA screen, next to the "**Name**" label.

4. When the name is completed, press **F2** to validate. The name of the playlist is shown in the center of the 3rd line of the screen.

HOW TO DELETE A PLAYLIST ?

1. Select the playlist you want to delete. The associated F key is red.

2. Press the CLEAR key.

3. Press the associated F key and confirm by pressing ENTER or CLEAR to cancel.

Multi PGM mode

2PGM or 3PGM

The MULTICAM has two modes for its basic operation, 1 PRV/PGM mode or Multi PGM mode:

- The **1 PGM/PRV mode**, as described previously, is the more powerful of the two, allowing for interaction between all outputs. Here, a synchronized replay can be rolled between the cameras with either a mix, wipe, or cut between them.
- The **MULTI PGM** mode is more basic, which gives the operator independent control of all outputs.

In this mode, all outputs can be controlled together (such as jogging back to a certain action, with all outputs) or they can be controlled individually (either Channel A, B, or C). Here, clips can be stored in one location with an «A»,«B» or «C» clip, or just one of the two / three.

SOFTKEYS (PGM SELECTION)

Rst CAM		SYNC TO	
PGM 1	PGM 2	PGM 3	TOGGLE

RST CAM:
This function restores the position of cameras on the active channels: CAM A on PGM1, CAM B on PGM2,...

SYNC TO : This button allows you to synchronize the PGM in use with another one. Press this button and then select the PGM to be used as a reference.

TOGGLE / ALL:

Toggle OFF: Selects one PGM and makes the others inactive.

Toggle ON : selects one PGM but does not modify the others

All : selects all PGMs

Try this *(in TRIPLE LSM configuration)*

Load 3 different Playlists and play them back at the same time.

1. From the Setup Menu, select Page 5, F2: Load Playlist. Set the Load playlist option to Conditional.
2. Go back to operational mode in 1 remote, select TOGGLE OFF first to load 3 different playlists into the 3 PGMs.
3. Then select ALL to take control of the 3 PGMs
4. Press PLAY to start the playback.

Advanced Operations

Secondary Lever Mode

This option allows the operator a means to extend the range of the LEVER Arm. This mode is engaged by pressing [SHIFT] + [LEVER]. When activated, it assumes the pre-defined range from the SETUP Menu. The normal lever range is 0/+100, while the secondary range is either +200/-200 or +100/-100. This can be very useful for showing a tennis ball on the line, or a player who has stepped out of bounds.

Try this

1. Find a portion of the record train that has a motion that pivots on a distinct action.

2. Then engage the secondary lever range by pressing [SHIFT] + [LEVER]. At this point, the [LEVER] button will flash green, indicating the secondary range is active.

3. Now you can pull the lever arm down to reverse the motion or up to resume at normal playback.

Clip Cam Toggle

This setting allows the operator to choose a clips angle rapidly and with the single push of a button. This can be very useful when using the 2 or 3 PGM modes. Every successive press of an F-key will change the camera angle of the desired clip number (A, B, C, D)

Try this

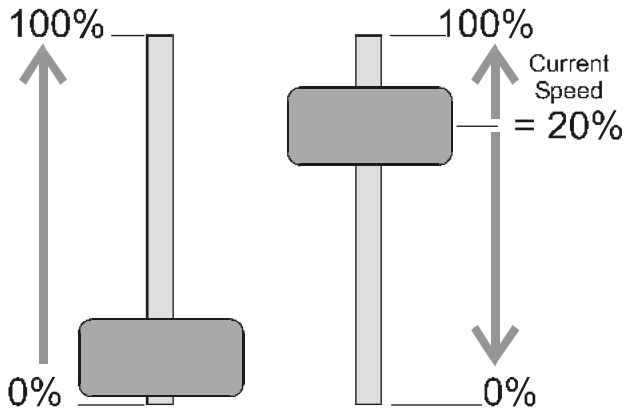
1. Save a clip with at minimum 2 angles.

2. Now recall the clip by pressing the respective F-key. Notice that the "A" angle of the clip recalls onto PGM1 (PGM) and the "B" angle recalls onto PGM2 (PRV).

3. Now press the F-key again. This will change the angle of each output, (PGM1 will change to xxxB and PGM2 will change to xxxA). If you only have control of PGM2 or PGM3, this would simply change only that output's angle.

Lever Engage Mode

This setting allows the operator to change the way the lever arm acts when performing slo-motion playback. The values are DIRECT or CURRENT. DIRECT means that regardless of the current playback speed on the output, the lever arm will modify the playback speed immediately if it is moved. CURRENT means that the lever arm will not engage a speed change until after you have reached the current speed that the video is playing at.

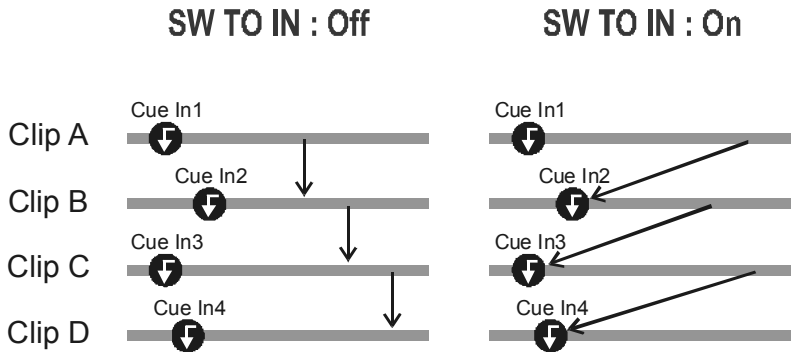


Try this

1. With lever engage set to DIRECT lets perform a slo-mo.
2. Move the lever arm to 0 (bottom of the range)
3. Press record. The video is playing now at 100% speed.
4. Move the lever arm upwards, and notice that the speed jumped from 100% to 1 or 2 %. This is a big jump and may not always be desirable.
5. Now change the lever engage mode to CURRENT. Do the same thing, set the lever arm to 0 and press record. The playback is at 100%.
6. Now move the lever arm upwards, and notice that the lever does not change the speed until you reach the current playback speed of 100%. This allows you to eliminate the jump in speed but does not allow for a fast freeze.

Sw to In (Synchro)

This setting allows the operator to change camera angles during playback and keep the clip synchronized between angles. If the Switch to In is active, switching between camera angles will jump the clip to the clip angles in point. If SWITCH TO IN is not active, changing angles will simply change the angle but remains at the same point in time (Time Code).



If a CUE IN point has not been previously defined, the MULTICAM acts as in Synchro ON mode (even if Sync OFF is shown) because the system has no reference to jump to.

Try this

1. Create a clip in the system; make it a long clip (30sec minimum).
2. With SW to In on (default setting) we can recall the clip to air and start playback (either the lever or Play button).
3. Now switch camera angles. You will notice that each time you switch angles, the clip jumps to the IN point and starts playback.
4. Switch SW TO IN off, ([MENU] and then press [B])
5. Now when you switch camera angles, the system stays at the same speed and time code, but it simply switches the angle.

This allows for the operator to playback a seamless sequence of action for multiple angles.

Preference Mode

This setting allows the operator to choose between two states: PREFERRED ON, which means every time a clip is recalled, it will first call up the angle that was used to make the clip originally. PREFERRED OFF means the system will not change angles when a clip is recalled it will only change clip number.

Try this

1. Using the same clip we made previously let's recall the clip onto the outputs (hit the F-key). You will notice that the angles you were viewing when you created the clip are recalled to the outputs.

2. The other angles (Triple and 4CAM) are not visible unless you change camera angles. This also means that if you were viewing angles B and D on the outputs when you made the clip, the system would have recalled angles B and D onto the outputs.

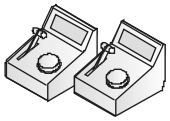
3. Switch PREFERENCE OFF ([MENU] and then press [D]).

Now when you recall any clips, the system will keep the last used angles on the outputs and simply change the clip number. This works very well if you are trying to find the "low" angle of a touchdown or score, but you do not remember the clip number.

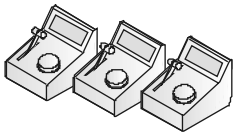
Multiple Remote Modes

The use of multiple remotes adds a host of features to the LSM system. Depending on the number of outputs channel you have available you can use up to 3 remotes on your system.

Used to globally operate all outputs on the system. This works well for times when you want to play synchronous replays on 2-3 outputs at once. It also works well if you want to perform effects between multiple channels.



This allows the operator (or multiple operators) to control each output with a separate controller. This works well for times when you may need to rapidly adjust the speed of two clips at the same time. This can also allow for delegation of duties on the system. One operator can use the remote to create clips while the other operator can focus on playplayback of those clips and playlist editing.



This mode is specific to the Triple LSM. Three remotes would maximize the playout functionality. Each remote would control a respective output on the system, while each remote still has complete access to all inputs to the server. This means one person could simply re-cue video and play replays, while the second remote could create and trim clips, and the third remote manages playlists and playback for the show.

Using Cue Points during playback

This feature allows the operator to utilize cue points to allow rapid jumps to material in the record train. There are two settings for the "Mark Cues", LIVE or PLAYBACK.

LIVE means you will make a cue mark relative to the LIVE timecode when you hit the button.

PLAYBACK means you will create a cue mark relative to the material that is cued on the output currently (like a VTR).

Try this

With Mark Cues set to LIVE, begin operating the system. If you are looking at LIVE video (Record Train) you will make cues based on the LIVE time code.

1. Recall a clip from the F-keys, and playback the clip.

2. While the clip is playing, if you mark a Cue point, the cue will be made based on the incoming video even though you have a clip on the outputs. If you go into the setup menus and change the (Mark Cue Points on page 5) to Playback, the system will work like a VTR.

3. If you return to the operation mode and recall the same clip and mark a cue point, the system will make the time code of the clip. The same thing will happen if you jog into the record train and mark a cue point from there.

The most useful part of marking clips in the Playback mode, is the ability to find the original record train material. If you made a clip 20 minutes ago and now you want to find the original video in the record train, do the following.
Call us the clip you made and mark a cue point based on the clips Time Code.
Now hit Record to return to the record train.
Now when you recall the Mark it will take you not to the Clip, but to the clips original material un-defined.

Return

This feature allows an operator to return to the last point in the record train prior to leaving the record train. A great feature is to allow an operator to pickup where he left off.

Jog backwards in the record train trying to find a very specific piece of video, live a persons face or unique image.

In a real show situation, the director would probably ask you to call up a clip while you were searching.

So without saving the image you have found, you simply recall another clip onto the outputs.

If you hit 

+ 

you will jump back to the place in the record train where you left off. Very handy!

On-the-fly playlist (1PGM/PRV)

Pitch Sequence in a Baseball game

This mode is not popular in the United States, but is the most powerful mode that you can operate the LSM. This mode allows the operator to perform LIVE MIXES or WIPES between output buffers.

Try this

In a Baseball game many operators want to make a "Pitch Sequence" or a string of clips that dissolve between them. Normally you can do this by using a playlist, but sometimes you do not have time to change to an empty list and fill it... You can use this mode to perform the same thing.

1. Call up the first clip onto PGM.
2. Now select the [PRV CTRL] (Preview Control). This allows you to use the LEVER arm and [PLAY] button to control the PGM output, and use Preview to recall and trim clips.
3. Recall the second clip into preview.
4. Press play to begin playback on PGM.
5. When the action ends, press [TAKE] to dissolve to the clip in preview.
6. Now call up the third clip (into preview) and press [TAKE] again when the second clip finishes... repeat until you are done.

You can eliminate the need to press [TAKE] by turning on the "AutoTake" feature in the Set-up menu.

Aux Clip – playlist

The auxiliary audio clip

In Playlist mode, the Aux Clip option allows you to add a second stereo audio track to the original video clips. For example: sport comments, music, jingles, ambiance sound,... This additional stereo audio track is available on outputs 7/8 of the ADR. The original audio tracks are still available on outputs 1/2 of the ADR.

The auxiliary audio clip selected is always played back with normal speed (100%), whatever the selected playback speed for the video.

Whatever the start point of the playlist, the auxiliary audio clip will always start playing from its IN point. If the duration of the AuxCLP is longer than the playlist duration, the auxiliary audio clip stops together with the playlist at the OUT point of last clip. Otherwise, the audio clip ends itself before the end of the playlist, when the audio clip reaches its OUT point.

Try this

1. Create a playlist and fill it with clips.
2. Before you recall the playlist, lets add an AUX CLIP to the list, best to make it a clip with great audio. We do this by recalling a clip onto an output and pressing [SHIFT] + [B]. This will add the audio from the recalled clip to the playlist as an AUX CLIP.
3. Now when we cue up the playlist and press play, the audio from this AUX CLIP will be played out of the Preview Channels outputs.

The audio is not linked to the playlist. If you begin playback in the middle of the list, the audio for the AUX CLIP will start from the beginning.

Fill/Key material loading and cueing

This is a popular function performed in the USA, and it involves the playback of animated material for keying over the shows Programming.

The material normally arrives for the operator as elements on videotape that must be loaded into the LSM. There will be one element that is the FILL material (full color with the animation) this is what is normally placed on PGM1. The second element on tape is the KEY material (sometimes called the HICON); this is a black/white version of the animation that will allow the switcher (vision mixer) to cut a keyhole for the animation.

The advantage of using animation like this is to allow the animation to utilize black in the image; normally a luminance key would eliminate the black in the animation.

Try this

1. To simulate a FILL/KEY, without the actual material let's find some similar looking footage.

2. Find a portion of video where you have 20 seconds of some sports footage.

3. Now let's pretend that the first 10 seconds in the FILL material and the last 10 seconds is the KEY material. Make sure that the same video is routed into both inputs on the system!!

4. Now mark the IN point at the beginning

5. And then mark the OUT point 20-25 seconds later and save the clip.

6. Now we can trim the material.

7. In the 2PGM Mode (Very important), recall the clip onto both channels. You will notice that you have the same video, but one is an A angle and the other is a B angle.

8. Take control of the PGM output and cue the video to the second half of the clip.

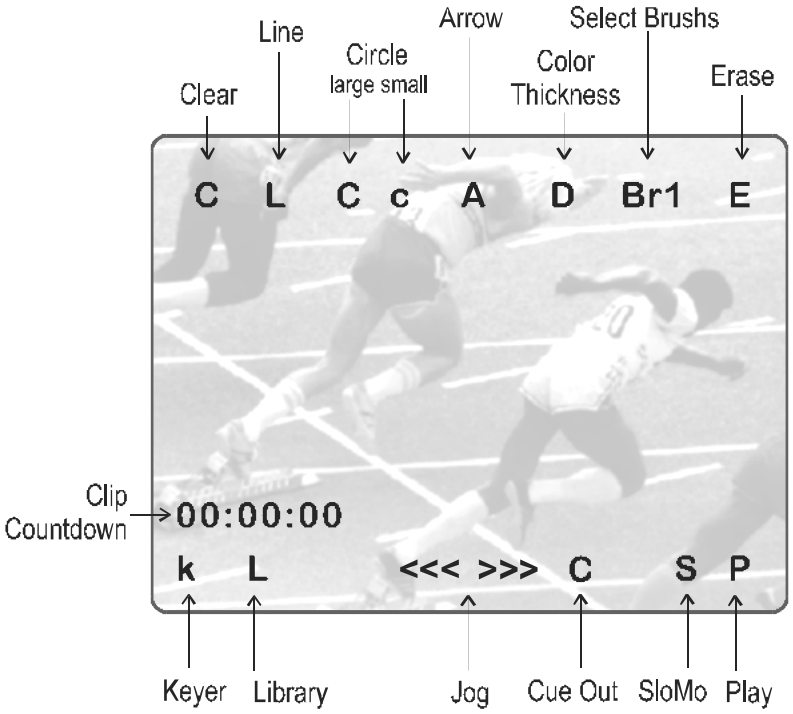
Now these two parts would look similar but the PGM1 video would be color and the PGM2 video would be monochrome.

PAINT Mode

The PAINT MODE allows the operator features that are normally not available on video servers. The Paint mode is also sometimes called a Telestrator.

Enter the PAINT MODE from the Multicam MENU. Once started, you system will be able to create, delete and trim clips in the same manner as the PGM modes.

The added features appear on the Output Monitoring screen. You can use either the tablet or a Touchscreen for this mode.



C (clear)	Clears screen
L	Enables line mode («one-shot»)
C / c (circle)	Selects large / small circle («one-shot»)
A	Automatic arrow at end of freehand drawing
D	Selects brush color and thickness

Br1 / Br2	Brush 1 or Brush 2 (Set by **D**)
E	Erase unwanted portion of graphic
k / >k<	keyer off / on
L	calls the Library module where drawing, logos, ... can be saved.
C	marks CUE OUT point on current clip
S	plays back the clip at slow motion speed. The speed of SloMo is predefined in the Prgm Speed item from the Setup Menu
P	plays back the current clip at normal speed

The clip countdown displays the field time. This means that the countdown matches the slow motion speed.

Selecting the "C" (clear) from the monitor enters the Clear menu and the DFC menu. DFC menu allows you to select the brush color from a YUV color palette

1. Create a clip, by setting in/out points and saving to a clip as normal.

2. Now recall the clip and use the stylus to draw highlights over the clip. You can change colors, add arrows to lines, draw circles and modify all aspects of the painting brush. You can also use the KEYER button [A] to fade the key on/off.

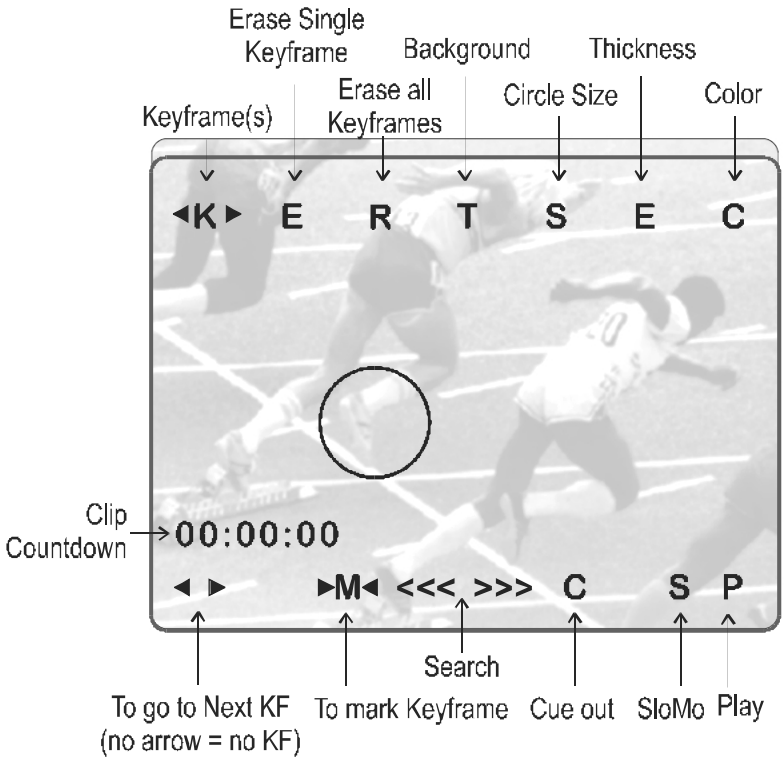
3. To add the advanced features of the Paint mode, you can use the Library feature. The Library allows you to draw complex or simple drawings and then save them for later recall.

TARGET Mode

The TARGET Mode allows the operator features that are normally not available on video servers. The Target mode is also sometimes called a Spot Shadow.

Enter the Target MODE from the Multicam MENU. Once started, you system will be able to create, delete and trim clips in the same manner as the PGM modes.

The added features will appear on the Output Monitoring screen.



T Select the darkness of the background (8 choices)

S Select the size of the circle (8 choices)

E Select the border thickness (8 choices)

C Select the border color (8 choices)

<K> Indicates keyframe has been marked on frame viewed

E	Erases currently displayed keyframe
R	Erases all keyframes marked
◀ ▶	Go to next keyframe (Forward or Backward)
M	allows you to mark a keyframe directly from the touch screen or from the tablet. If this option is active, touching a point on the screen automatically creates the keyframe. This option becomes inactive after each keyframe creation.
C	marks CUE OUT point on current clip
S	starts slow-motion (preset in Prgm Spd)
P	plays back the current clip
<<< >>>	searches the material (clip or live recorded). A single click with the stylus move one frame forward or one frame back

Try this

1. Recall the same clip that we used in the PAINT example previously.
2. Using the tablet or Touchscreen, point to an object or person on the screen. This will induce a spot shadow (circle) over the object.
3. All of the variables of the target are adjustable. Select Size, Transparency, Edge thickness, or Color.
4. By removing the stylus from the pad (or finger from the Touchscreen) the target disappears.

You can use this to perform instant spot shadows for replays.

Try this : KEYFRAMES

The Target mode adds a very unique feature called keyframes. These keyframes allow you to set anchors in the clip that refer to the position of the spot shadow.

By setting multiple keyframes, you can "track" the movement of a ball or players foot.

1. To set a keyframe, simply highlight the object by pressing on the tablet (or Touchscreen)
2. then press the [TAKE] button.
3. As you jog the video you will see the target interpolate between the keyframes.


More keyframes = smoother motion.

The unique fact about the keyframes, is that they are relative to each clip. Therefore, the operator can set keyframes to track a football on one clip, and set different keyframes on a clip that shows a player movement. Changing back to the first clip will restore that clip's keyframes.

Try this : MOTIF

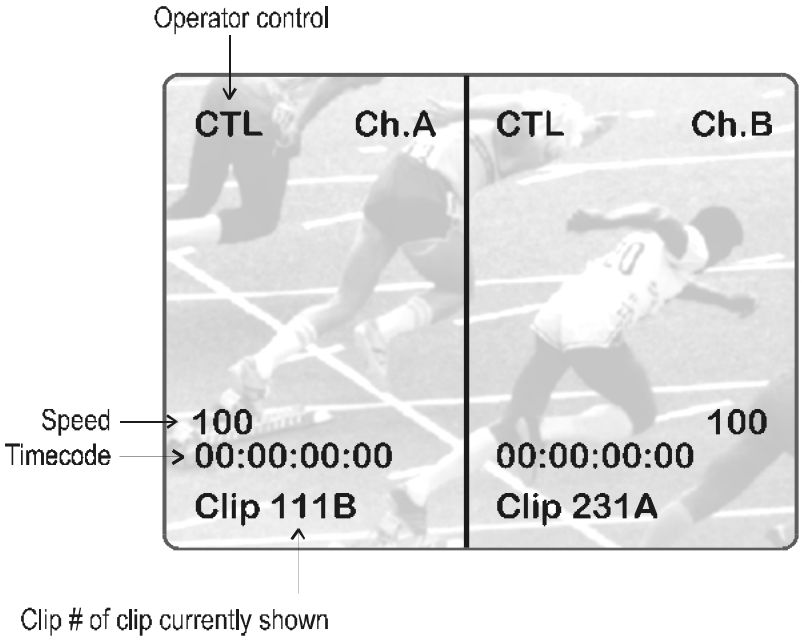
The target mode also allows the operator to magnify the image to view small details in the replay (out of bounds or contact with another player for example).

1. Pressing the [A] button (on the remote controller) in the target mode will toggle the circle from shadow to Magnify.
2. Selecting [A] again will switch back to highlight mode.

Note: this will take 1-2 seconds to reconfigure the hardware…be patient.

SPLIT Mode

The split mode allows a basic split screen effect one PGM 1. This mode operates very similar to the 2PGM mode, except that the two outputs are now Left and right parts of the screen. The Split mode also allows for "DVE" like adjustment of the video within the split effect, for optimum positioning of the material.



Try this

1. Recall the same clips we used to practice in the Target Mode.

2. Selecting [Left] will allow you to work on the left side of the split, and vice-versa for the [right].

3. If you choose [L+R], you control both channels simultaneously.

4. By selecting [D], you can modify the settings of the split. [<- LF ->] and [<- RG ->] allow you to change the position of the video within the split, while [<- WP ->] allows you to bias the wipe to the left or right.

5. Selecting [Shift] allows you to move between these two modes of adjustment controls.

If you were to cue up two different clips (111A into the LEFT, and 115B

into the RIGHT) and they were both a golfer's swing. You could then synchronize the swings together and play them back to show differences between their two swings styles.

ADVANCED SPLIT:

This is called tracking, and it needs to be enabled in the SETUP MENU for it to work. (Page 3 – F6)

When tracking is enabled, the split screen mode will utilize the keyframe information that was set in the target mode to adjust the position of the clip within the split.

This is a great feature for keeping an object centered within the Split screen.

Try this

1. Recall the two clips we made keyframes on in the Target mode.

2. Place one on the left and one on the right. Notice that now, the split screen displays "TRACKING" on the screen's monitoring outputs. This indicates the presence of keyframes for the clips recalled.

3. Now when you playback the split screen effect, the system will adjust the clips position inside the split screen. This can be used to track a coach face if he moves a lot, or keep a ball centered if the camera didn't follow the ball originally.