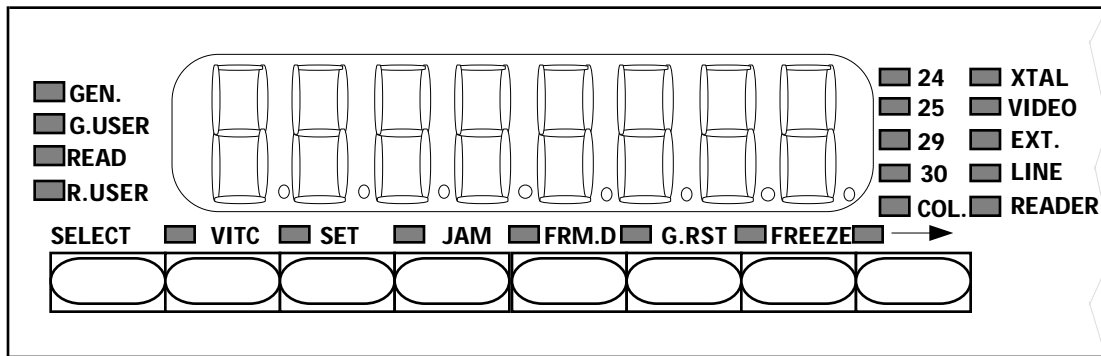


TIMECODE READER/GENERATOR



Displays

In normal operation the Main Display shows Generator Timecode, Generator User Bits, Reader Timecode or Reader User Bits. The column of four LEDs to the left of the Main Display indicate whether GEN (Generator Timecode), G.USER (Generator User Bits), READ (Reader Timecode) or R.USER (Reader User Bits) mode is selected.

STD.Display

The STD. Display is the column of LEDs to the right of the Main Display. These LEDs indicate the standard of incoming Timecode when either READ or R.USER LEDs are lit. They indicate the selected standard of the Timecode Generator when either GEN or G.USER are lit (See PRIMARY SETUP for how to select the Generator standard.). The standards recognized are:

- 24 - 24 frame per second FILM Timecode.
- 25 - 25 frame per second EBU Timecode.
- 29 - 29.97 frame per second SMPTE drop frame Timecode.
- 30 - 30 frame per second SMPTE Timecode.

The COL. LED is under the STD.Display LEDs. This LED indicates that the color bit is set in the incoming code when the 'READ' or 'R.USER' LEDs are lit or to indicate that the Timecode Generator is color locked to an external video signal when the 'GEN' or 'G.USER' LEDs are lit (See PRIMARY SETUP for how to select the Generator color lock status.).

REF. Display

The REF Display is next to the STD. Display. These LEDs indicate the selected frame rate reference for the Timecode Generator. The available frame rate references are listed:

- XTAL - Internal crystal reference.
- VIDEO - External composite video input.
- EXT - External frame or 2x frame rate input.
- MAINS - AC power line.
- READER - Timecode Reader frame rate.

When a reference other than XTAL is selected the LED will flash if it is not sensed. When the Generator locks to the external reference the LED will stop flashing (See PRIMARY SETUP for how to select the Generator Reference.).

Reader/Generator Keys

SELECT key

The Main Display mode can be chosen by pressing the SELECT key until the GEN, G.USER, READ or R.USER LED to the left of the Main Display is lit.

VITC key

The optional VITC Reader is enabled by the VITC key on the front panel. When the VITC LED is lit the VITC Reader is enabled. The VITC Reader uses the INSERTER video signal. The VITC Reader looks at ALL Video lines so that it will work in stop or wind. The LTC Reader is always active, and will read code from 1/20 to 80x play speed provided that it receives a clean input signal. When 10 frames of good Timecode are detected, the LTC Reader will override the VITC Reader.

SET key

The SET key puts the Reader/Generator into and out of Setup Mode. When the Setup Mode is active the "SET" LED is lit.

JAM key

The JAM key puts the Reader/Generator in JAM mode. The JAM LED is lit and the Generator is numerically locked to the Reader. Whenever the Reader discovers new Timecode, or a Timecode edit, the Timecode data is transferred to the Generator. If good Timecode is present when the JAM mode is activated the current Timecode data is transferred from the Reader to the Generator.

The generated Timecode is locked to the selected reference. When regenerating Timecode from an audio tape recorder the reference should be set to READER. When re-generating Timecode from a VTR the reference should be set to VIDEO only when the original Timecode was referenced to video and both the VTR and the Generator are connected to the same video reference. There are two modes of JAM available:

- 1) JAM FREE: in this mode the Generator continues if the Reader code stops.
- 2) JAM CODE: in this mode the Generator stops if the Reader code stops for more than 10 frames.

FRM.D key

The FRM.D key is used to enable or disable the display of frames. The LED is lit when the frame display is disabled. This key also affects the frame display of the inserted video.

G.RST key

The G.RST key starts the Generator from the preset start time as well as stopping and resetting it. When the "G.RST" LED is lit, the Generator is stopped and reverts to the preset start time. Pressing the G.RST key starts the Generator and turns off the "G.RST" LED (See PRIMARY SETUP for how to enter the preset start time.).

FRZ key

The FRZ key freezes the display at any time. When the display is frozen the FRZ LED is lit.

CUE XFER(→)key

The → key transfers the Timecode Address from the main display into the cue list .

GENERATOR SETUP(Generator Start Time)

To set the Timecode Generator start time or User Bits:

- 1) Press the SET key. The SET LED should light up .
- 2) Press the SELECT key to select the Timecode Generator start time or User Bits(when the SET LED is lit, the SELECT key toggles between GEN. and G.USER).

The " ▲ " and " ▼ " keys change the value of the selection. The "<" and ">" keys move the cursor left and right. The blinking decimal point or "." indicates the digit of the Timecode/User Bits being modified. The current displayed data can be cleared to all zero's by pressing the " ▲ " and " ▼ " keys simultaneously. To exit the setup mode press either the SET or STORE key. The values entered are now stored as the new Generator start time or User Bits

PRIMARY SETUP

PRIMARY SETUP is the mode in which the Timecode Generator Standard & Reference, Inserter Video Format and Jam type are set. The PRIMARY SETUP parameters are:

GEn Std
GEn rEF Not Col / 4 FIELd / 8 FIELd
PAL / NTSC
JAn FREE / JAn CoDE

In this mode the Main Display will show either the setup parameter or the entry for that parameter. To access PRIMARY SETUP, press the SET key or make sure the SET LED is lit; then press the "<" and ">" keys simultaneously. The "<" and ">" keys are used to select the parameter displayed. The " ▲ " and " ▼ " keys are used to scroll through parameter selections. When the "SET" key is pressed, both the primary setup and setup modes are exited and all settings entered are stored.

GEn Std

The Generator standard may be set to:

24 - 24 frame per second FILM Timecode
25 - 25 frame per second EBU Timecode
29 - SMPTE drop frame Timecode
30 - SMPTE Timecode

When generating SMPTE Timecode either drop or non drop, the frame rate will be determined by the selected reference. When XTAL is selected as the reference drop frame code will be generated at 29.97 frames per second.

GEN rEF (Generator Reference)

The Generator frame rate reference may be set to:

XTAL - Internal crystal reference.

VIDEO - External composite video input.

EXT - External frame or 2x frame rate input.

MAINS - AC power line.

READER - Timecode Reader frame rate.

{NOTE:When the Generator is not locked to film the Generator frame rate is assumed to be the same or one half of the reference frame rate.}

The Generator color lock may be set to the following when the Generator is locked to VIDEO:

Not Col - No color frame lock, locked to frame rate only.

Also known as 2 Field lock.

4 FIELd - Color locked to 4 field(NTSC) sequence only.

8 FIELd - Full PAL color lock, 8 field sequence.

The color lock information is derived from the external video reference input. Check that color frame detection circuit is properly calibrated (See Appendix C) before using color lock.

PAL / NtSC (Insert Standard)

This flag sets the expected video standard for the inserter. If set to PAL the unit will operate correctly on NTSC but any insertion at the bottom of the screen will not be displayed since there are less lines per field.

JAN FrEE / JAN CodE (Generator JAM type)

When the "JAM" LED is lit the Generator is numerically jammed to the Reader Timecode. The JAM types available are:

1) JAN FrEE - The Reader data is transferred when the JAM key is pressed to enable JAM and when new Timecode is read by the Reader. The Generator is free running and will continue when the Reader stops reading Timecode. Used when copying a tape to avoid dropouts or when extending Timecode on a tape.

2) JAM CodE - The Reader data is transferred when the JAM key is pressed to enable jam and when new Timecode is read by the Reader. If the Reader code stops for more than 25 frames the Generator will generate stationary code at the last good Timecode number. Used when regenerating Timecode used in a system which is susceptible to dropouts, but where the system should stop if the master Timecode stops.

TIMECODE and USER BITS INSERTION

In addition to Streamers and Punches, the VS-1 can simultaneously insert Reader Timecode, Reader User Bits, Generator Timecode, and Generator User Bits on the Video Inserter Input signal.

ENABLE/DISABLE

To Enable/Disable an insertion:

- 1) Use the SELECT key to choose 'GEN.', 'G.USER', 'READ', or 'R.USER'.
- 2) Press the T/C key to enable/disable the insertion.

When the selected data insertion is enabled the T/C LED is lit.

STYLE

There are four different styles of Timecode insertion available:

- 1) White numerals/dark grey background.
- 2) Black numerals/light grey background.
- 3) White numerals/no background.
- 4) Black numerals/no background.

To change the style of an insertion:

- 1) Tap SELECT key to your choice (GEN., G.USER, READ or R.USER)
 - 2) Hold down the T/C key and press the STYLE key.
- Each time the STYLE key is pressed the style will be incremented once.

SIZE

There are seven different sizes of numerals available from 10 lines by 8 pixels to 40 lines by 32 pixels.

To change the size of an insertion:

- 1) Tap SELECT key to your choice (GEN., G.USER, READ or R.USER)
- 2) Hold down the T/C key and press the SIZE key. Each time the SIZE key is pressed, the height or width will be incremented; when at maximum size the next depression of the SIZE key will revert the size to 10 lines by 8 pixels.

POSITION

Both the horizontal and the vertical position on the screen may be changed in increments of 8 pixels and 10 lines respectively.

To change the vertical position of an insertion:

- 1) Tap SELECT key to your choice (GEN., G.USER, READ or R.USER)
- 2) Hold down the T/C key and press the ^ key to move up the screen and the v key to move down. {Note the screen "wraps around" both directions. To move from top of screen to bottom it is often quicker to use the ^ key.}

To change the horizontal position of an insertion:

- 1) Tap SELECT key to your choice (GEN., G.USER, READ or R.USER)
- 2) Hold down the T/C key and press the < key or the > key to move left or right.

WIPE

ENABLE/DISABLE

To enable the wipe, press the WIPE key so that the WIPE LED is illuminated. To disable the wipe, press the WIPE key so that the WIPE LED is extinguished.

Each cue group may be assigned to one of three different wipes. To modify each WIPE display the cursor, style, and size keys must be assigned to the selected wipe. The cursor assign menu may be accessed from the wipe option select menu, See section 10.39 WIPE: CURSOR ASSIGN for full details.

3.02 STYLE

There are six different styles of wipe available as follows:-

- 1) Dark grey box filling from left with white.
- 2) Light grey box filling from left with black.
- 3) Dark grey box with white vertical line moving from left to right.
- 4) Light grey box with black vertical line moving from left to right.
- 5) Dark grey full height target line with white full height line moving from left to right.
- 6) Light grey full height target line with black full height line moving from left to right.

To change the style, hold the WIPE key pressed and press the STYLE key. Each time the STYLE key is pressed the style will be incremented once.

3.03 SIZE

For wipe styles 1-4 inclusive the height of the Grey box may be changed from 10 lines to 40 lines in increments of 10 lines.

To change the size, hold the WIPE key pressed and press the SIZE key. Each time the SIZE key is pressed the height will be incremented by 10 lines, when at maximum height the next press of the SIZE key will cause the height to revert to 10 lines.

3.04 POSITION

For styles 1-4 inclusive the vertical position on the screen may be changed in increments of 10 lines.

To change the vertical position, hold the WIPE key pressed and press the ^ key to move up the screen and the v key to move down the screen.

NOTE: The screen "wraps round" eg. to move from top of screen to bottom it is often quicker to use the ^ key.

3.10 Q-COUNT INSERTION

The "Q-COUNT" is a display showing the elapsed time since the last cue point. The format of this display is Minutes, seconds and optional frames.

3.11 ENABLE/DISABLE

To enable or disable the Q-COUNT insertion, enter mode and press "3" for "3) WIPE 1 OPTION SELECT", then press "4" as necessary to turn ON or OFF "4) POSITION COUNT AFTER Q-POINT". The standard format for Q-COUNT is MINS:SECS, option "5" may be used to turn a frame display ON or OFF.

To modify the Q-COUNT display the cursor, style, and size keys must be assigned to the Q-COUNT. The cursor assign menu may be accessed from the wipe option select menu. Select "4) Q-COUNT & ADVANCE WARNING", when active this line will flash. The Q-COUNT display may then be modified as described below.

3.12 STYLE

There are four different styles of Q-COUNT insertion available:

- 1) White numerals/dark grey background.
- 2) Black numerals/light grey background.
- 3) White numerals/no background.
- 4) Black numerals/no background.

To change the Q-COUNT style:

1) hold the WIPE key pressed and press the STYLE key. Each time the STYLE key is pressed the style will be incremented once.

3.13 SIZE

There are seven different sizes of numerals available from 10 lines by 8 pixels to 40 lines by 32 pixels.

To change the size, hold the WIPE key pressed and press the SIZE key. Each time the SIZE key is pressed the height will be incremented by 10 lines or the width by 8 pixels, when at maximum size the next press of the SIZE key will cause the size to revert to 10 lines by 8 pixels.

3.14 POSITION

Both the horizontal and the vertical position on the screen may be changed in increments of 8 pixels and 10 lines respectively.

To change the vertical position, hold the WIPE key pressed and press the ^ key to move up the screen and the v key to move down

To change the horizontal position, hold the WIPE key pressed and press the < key or > key as required.

NOTE: The screen "wraps round" in both directions, eg. to move from top of screen to bottom it is often quicker to use the ^ key.

4.00 COUNTDOWN and FLASH FRAME

4.01 ENABLE/DISABLE

To enable the count down and flash frame, press the C/D key so that the C/D LED is illuminated. To disable the countdown and flash frame press the C/D key so that the C/D LED is extinguished.

Note. The flash frame is also enabled and disabled via the mode menu. See section 10.36 for further details.

4.02 STYLE

There are five different styles of countdown available as follows:-

- 1) White numerals on a dark grey background.
- 2) Black numerals on a light grey background.
- 3) White numerals with no background.
- 4) Black numerals with no background.
- 5) White numerals on large black background

To change the style, hold the C/D key pressed and press the STYLE key. Each time the STYLE key is pressed the style will be incremented once.

4.03 SIZE

There are eight different sizes of numerals available from 10 lines by 8 pixels to 40 lines by 32 pixels, and 180 lines by 112 pixels.

To change the size, hold the C/D key pressed and press the SIZE key. Each time the SIZE key is pressed the height will be incremented by 10 lines or the width by 8 pixels, when at maximum size the next press of the SIZE key will cause the size to revert to 10 lines by 8 pixels.

4.04 POSITION

Both the horizontal and the vertical position on the screen may be changed in increments of 8 pixels and 10 lines respectively.

To change the vertical position, hold the C/D key pressed and press the ^ key to move up the

screen and the v key to move down

To change the horizontal position, hold the C/D key pressed and press the < key or > key as required.

Note the screen "wraps round" in both directions, eg. to move from top of screen to bottom it is often quicker to use the ^ key.

5.00 RECORD/PLAY FLAG INSERTION

5.01 ENABLE/DISABLE

To enable or disable the RECORD/PLAY FLAG insertion, enter mode and press "5" for "5) SYSTEM OPTIONS", then press "5" to select "5) SYSTEM OPTION SELECT". Once the system option select menu is displayed press 4 to switch ON or OFF "4) RECORD/PLAY INSERT".

5.02 INSERTED FLAGS

There are currently four different flags available, REHEARSE, EDIT, PLAY, and RECORD. Once the record/play flag is enabled it will be displayed whenever the code Reader discovers good play speed code.

5.03 FRONT PANEL SELECTION

The display may be changed from the front panel by holding the SHIFT key pressed and pressing the DATA key between REHEARSE, EDIT, and PLAY.

5.04 REMOTE SELECTION

The display may be changed by the opto isolator inputs. Opto-isolator input 4 will over-ride any current display to RECORD. The Opto-isolator inputs must be assigned as described in section 10.56, when assigned to WIPE + REHEARSE/EDIT/RECORD/PLAY they control the display as follows:-

OPTO 1: External wipe trigger, triggers an immediate count down and wipe. The speed of the wipe is the same as defined in the first entry of the cue list.

OPTO 2: Changes the record/play insert to EDIT.

OPTO 3: Changes the record/play insert to PLAY.

OPTO 4: Changes the record/play insert to RECORD.

The display may be modified as described below:-

5.05 STYLE

There are four different styles of RECORD/PLAY FLAG insertion available as follows-

- 1) White letters on a dark grey background.
- 2) Black letters on a light grey background.
- 3) White letters with no background.

4) Black letters with no background.

To change the style, hold the DATA key pressed and press the STYLE key. Each time the STYLE key is pressed the style will be incremented once.

5.06 SIZE

There are four different sizes of letters available from 10 lines by 8 pixels to 20 lines by 16 pixels.

To change the size, hold the DATA key pressed and press the SIZE key. Each time the SIZE key is pressed the height will be incremented by 10 lines or the width by 8 pixels, when at maximum size the next press of the SIZE key will cause the size to revert to 10 lines by 8 pixels.

5.07 POSITION

Both the horizontal and the vertical position on the screen may be changed in increments of 8 pixels and 10 lines respectively.

To change the vertical position, hold the DATA key pressed and press the ^ key to move up the screen and the v key to move down

To change the horizontal position, hold the DATA key pressed and press the < key or > key as required.

NOTE: The screen "wraps round" in both directions, eg. to move from top of screen to bottom it is often quicker to use the ^ key.