Chapter 6 Features and Controls

This chapter describes the key functions of the Keyboard Controller Unit (KCU). The following categories are discussed:

- Display screen provides machine and time code information, machine status, and a calculator scratch pad.

- Transport controls provide transport motion control, including a jog/shuttle wheel.

- Device select keys determine the system operating mode and set operating parameters.

- Machine (group) select keys determine machine mode.

- KCU calculator keys perform arithmetic calculations and a variety of additional functions.

- Auxiliary functions keys work in combination with other keys to facilitate arithmetic and other KCU operations.

- KCU status indicators include function keys as well as lighted status displays.

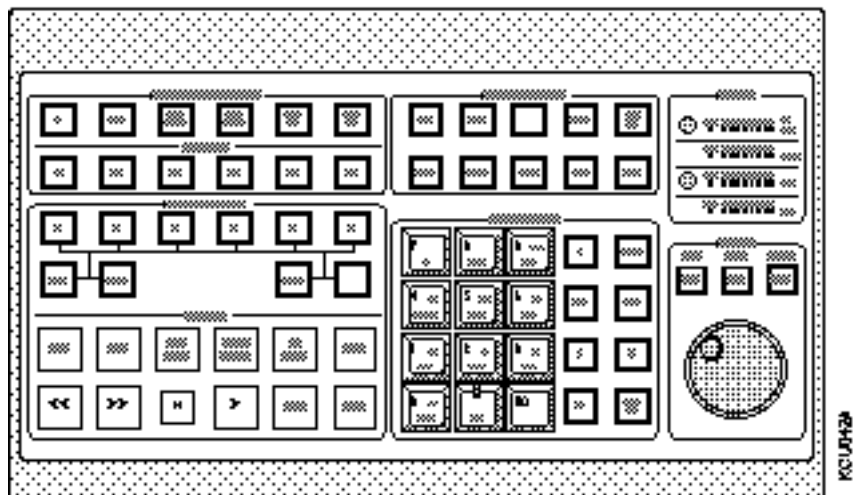- Special function keys accelerate specific edit operations.

Figure Chapter 6 -1. KCU Key Layout

KCU Display Screen

The KCU uses a bright, 80-character dot matrix vacuum fluorescent display. The display provides transport and time code status, setup displays, register contents, prompt and error messages, and a calculator scratch pad for numeric time code calculations. Information is grouped in the following areas, corresponding to the example in the following figure:

- Machine information in the upper left, **A* b c d**

- Time code information in the upper right, **A> 2:40:55:20: LL**

- Machine status in the lower left, **>L >L >L >L**

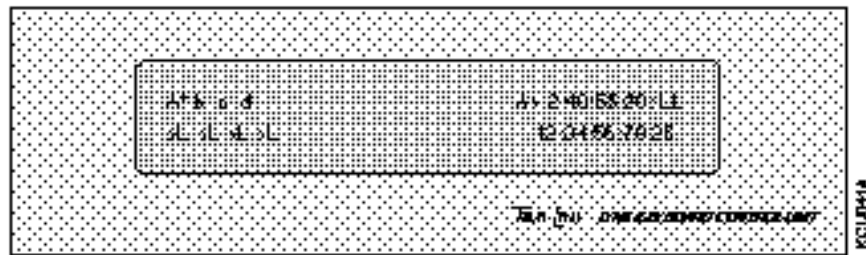- Calculator scratch pad in the lower right, **12:34:56:78 .25**

Figure Chapter 6 -2. KCU Display Screen

Machine Information

The machine information displayed provides information about the group and solo transport status, including time code position, lock error, transport control status, and master and slave designations.

Solo Mode Display

Solo is accessed from the group operating display by pressing the [SOLO] key. In Solo, the display updates information about the current soloed transport. Time code position, group status and transport control status are all updated in the KCU display screen for the selected solo machine. Pressing the [SOLO] key again returns the display to the group operating display.

Group Mode Display

The group display mode provides master transport time code position, lock status, and transport status.

- A capital letter (A) in the upper left portion of the display indicates that the machine is the master. Any machine can be the master.

- A lower case letter (b, c) indicates that the machine is a slave.

- An asterisk (*) indicates that the machine is the time code reference machine.

- >L indicates that the machine is in play and locked.

- >W indicates that the machine is in wild speed. That is, the KCU is controlling the machine, but not synchronizing it.

Time Code Information

Time code for the group or selected machine is always displayed in the upper right. The time code displayed is dependent on group or machine status selected. For example, when the GRP LED is lit, group machine status and master machine time code are displayed.

Press a machine select key [A-F] while in group display to display machine status and the transport time code. If the SOLO LED is pressed, the selected soloed machine time code is displayed.

Leading zeros are not displayed. For example, 3 minutes, 13 seconds, and 2 frames *00:03:13:02* is displayed as *3:13:02.*

- The example is non-drop frame code, indicated by separating the seconds and frames digits with a colon.

- If the example was drop frame code, it would be indicated by separating the seconds and frames digits with a comma rather than a colon, written as *3:13,02.*

Machine Status

Tape machine transport status is displayed in the lower left corner.

>L	Lock
<<	Rewind
CUE	Cueing
R	Record
>>	Fast Forward
RLB	Rollback
r	Rehearse
< >	Jog/Shuttle
LOC	Locate
Ch	Chase
·	Stop
REP	Replay
NC	No Code

If a transport module is offline, a dash (-) is displayed as the status for that machine, indicating that no control of that module is available until it is placed online.

The following reference designations indicate to which system reference the machine or group is locked:

I	Internal Fix
i	Internal Variable
L	External Video
A	Aux (not implemented in current software)
M	Mains (available with K330 software only)
V	VSO
P	Pilot (not implemented in current software)
T	External Time Code

In solo mode, a single letter is displayed.

In group mode, two letters are displayed. The first letter indicates that the master machine is locked to the system speed reference. The second letter indicates that all of the other machines in the synchronized group are also locked. For example, LL indicates that External Video is selected as the system reference.

Calculator Scratch Pad

This area of the display is active whenever any of the calculator keys are pressed or a time code register or memory is recalled.

- Clear the current value in the display with the [CLR] key.

- Clear the last digit entered with the [BS] key.

The calculator can be accessed from Group, Status, or Solo machine modes.

The calculator lets you perform a variety of time code calculator operations as outlined in the following examples:

1. Press the [CLR] key to clear the calculator display.

2. Using the keys, type in 1:25:15:10.

3. Press the minus [–] key.

    Minus is displayed in the calculator section.

4. Type 10:10 (ten seconds, 10 frames).

5. Press the equal [=] key.

1:25:05:00 is displayed as the correct calculation.
This number can in turn be stored to any register or memory location. Numbers can also be recalled from registers, have calculations performed, and the new value can be used.
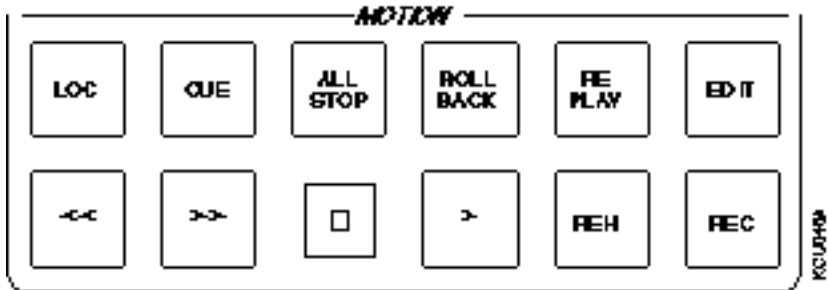
Transport Controls

Figure Chapter 6 -3. Motion Control Keys

LOC (Locate) Key

In solo mode, the KCU locates the soloed machine to the time code in the calculator data entry area, minus the system preroll.

In group mode, the KCU locates all transports currently assigned to the group to the time in the calculator data entry area, minus the system preroll.

CUE Key

In solo mode, the KCU cues the soloed machine to the time code in the Cue Point register.

In group mode, the KCU cues all machines currently assigned to the group to the time code stored in the Cue Point register. If a cue point is not set, the KCU uses the value in the In Point register. If there is no cue point or in point set, the *No in point or cue point set* message is displayed.

ALL STOP Key

The [ALL STOP] key issues an immediate Stop command to all transports on the system, regardless of group status, solo status, or transport mode. All machines will stop. This key stops unexpected transport operations.

ROLLBACK Key

Keyboard Control Unit

The [ROLLBACK] key rewinds the selected machine or group by a predetermined amount. The rollback time can be changed by entering a new value, then pressing the [STO] and [ROLLBACK] keys.

Default rollback value is 15 seconds.

The [ROLLBACK] key can also be used as a reverse play key for transports that can play backward. To change the [ROLLBACK] key to PLAY REV,

1. Press [SETUP].

2. Press [ROLLBACK].

3. Use the [+] and [–] keys to select the desired function.

REPLAY Key

Use the [REPLAY] key with the [EDIT] key to replay the current edit. Pressing [EDIT] followed by [REPLAY] cues the selected machines in the group to cue to the current edit preroll position and commence an edit replay sequence.

The [REPLAY] key also has an associated replay register that stores the time code when the [>] (PLAY) key was last pressed. Press [REPLAY] to locate to the time code in effect when the [>]key was last pressed.

Press [>]while the machines are playing to update the replay register and set a new replay register time code.

EDIT Key

Use the [EDIT] key to initiate an edit sequence.

See *Editing with the KCU* in the Getting Started chapter for detailed information on editing.

In edit, record, and rehearse, the KCU GPI's can be selected to operate at the edit in point. In edit replay, GPI's are disabled. See the *Event Select GPI [EVNT] Options Menu* in the Getting Started chapter for further information on the GPI relays.

<< (Rewind) Key

In solo mode, the Rewind command is issued only to the machine that is soloed.

In group mode, the Rewind command puts all machines currently assigned to the group into rewind or chase.

>> (Fast Forward) Key

In solo mode, the Fast Forward command is issued only to the transport that is soloed.

In group mode, the Fast Forward command puts all transports currently assigned to the group into fast forward or chase.

■ (Stop) Key

In solo mode, the Stop command is issued only to the machine that is soloed.

Pressing [■] (STOP) in group mode initiates an intelligent stop function. The master machine stops immediately. Each slave machine is parked at a position that corresponds to the master machine position, taking individual offsets into account. The system is cued and ready to synchronize.

The [■] key also has an associated Drum Stop command that can have a serially controlled video machine initiate a drum stop. This effectively causes the VTR to de-lace the tape off of its drum, preventing unwanted drum and tape wear.

> (Play) Key

In solo mode, the Play command is issued only to the machine that is soloed.

In group mode, the Play command puts machines currently assigned to the group into play.

In play, the KCU synchronizes and locks each of the machines including the master machine to the system speed reference.

REH Key

In solo mode, the Rehearse command is issued to the soloed machine if it is record enabled and in lock.

In group mode, the Rehearse command is issued to all machines currently assigned to the group that are record enabled, if the group is locked.

The Rehearse command can be issued manually by pressing the [REH] key or by pressing the [REH] and [PLAY] keys together. The Rehearse command can also be issued automatically as part of the KCU edit routine.

See the *Setup Options Menu* section in the Getting Started chapter for information on altering the [REH] key option.

The [REH] key has an associated REH LED. In solo mode, the REH LED indicates the rehearse status of the soloed machine. In group mode, the REH LED indicates the rehearse status of all the machines currently assigned to the group. If any machine in the group is in rehearse, then the REH LED is lighted.

REC Key

In solo mode, the Record command is issued to the soloed machine if it is record enabled and in lock.

In group mode, the Record command is issued to all machines currently assigned to the group that are record enabled, if the group is locked.

The Record command can be issued manually by pressing the [REC] key or by pressing the [REC] and [PLAY] keys together. The Record command can also be issued automatically as part of the KCU edit routine.

The [REC] key has an associated REC LED. The Lynx-2 machine interface cables monitor the actual record status of each machine. The REC LED is a true record tally. When lighted, the LED indicates that the machine is actually in record.

In solo mode, the REC LED indicates the record status of the soloed machine. In group mode, the REC LED indicates the record status of all the machines currently assigned to the group. If any machine in the group is in record, the REC LED is turned on.

Using the Jog/Shuttle Wheel and Controls

Use the jog/shuttle wheel in trim, jog, and shuttle modes to do the following:

- Spool machines at controlled wind speeds.

- Nudge or bump a tape one frame at a time.

- Trim the offset of a source machine in real time to achieve a precise time relationship between the master and slave machines.
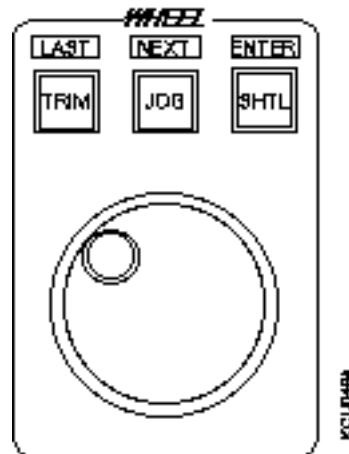

Figure Chapter 6 -4. Jog/Shuttle Wheel and Controls

TRIM Key

The [TRIM] key selects trim mode. Use the jog wheel and the [+] and [–] keys to adjust register values. You may adjust the values in most registers. After selecting trim, recall a register; then press the [+] or [–] key or use the jog wheel to increase or decrease the time code value. Press and hold the [+] or [–] key to cause the key to auto-repeat.

Each time that you press [TRIM], the KCU selects the last register that was trimmed. Press a register key on the calculator keypad to select a different register to trim.

The following keys are also active in trim mode:

[CLR]   Clears any number from the data entry area of the display and exits trim mode.

[STO]   Initiates a Store command and prompts for a register to store to.

[LAST]   In setup mode, the [TRIM] key is used as the [LAST] key. This key steps backwards to the previous item in a menu.

JOG Key

In jog mode, the wheel bumps a transport forward (clockwise) or backward (counter-clockwise) a small amount each time that it is turned. If you turn the wheel continuously, the tape scrubs past the heads with a velocity proportional to how fast you turn the wheel.

NEXT Key

In setup mode, the [JOG] key is used as the [NEXT] key. This key steps forward to the next item in a menu.

SHUTTLE Key

In shuttle mode, turn the wheel clockwise to move the selected machines forward with a velocity proportional to the amount that you rotate the wheel from its starting position. Turn the wheel counter-clockwise to initiate variable-speed backward motion. Shuttle speed may be varied from a slow crawl to several times normal play speed.

Shuttle mode is a controlled speed mode generally on video transports only. Most audio tape machines do not have a variable speed shuttle mode, so the shuttle function is implemented by rapidly toggling between rewind and fast forward. The actual velocity is determined by the ballistics of the particular machine.

Shuttle is used most effectively in solo mode to position a single machine accurately for setting sync points and in and out points. If you use shuttle in group mode, the wheel controls only the master machine; all other machines will chase the master machine and attempt to maintain their correct park-ahead offsets.

ENTR Key

The [ENTR] key confirms operations that may cause a loss of data or setup information. For example, [CLR] + [POLL] resets the system only after you press [ENTR] to confirm this action.

Device Select Keys

Use the device select keys to determine the system operating mode, and to set operating parameters for system, transport, GPI, and Film Lynx-2.
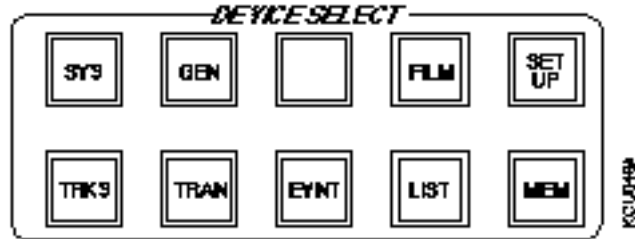

Figure Chapter 6 -5. Device Select Keys

SYS Key

The [SYS] key displays the software version numbers for the KCU system microprocessors, when used with the System Supervisor Unit (SSU), and provides access to the system error list.

For further information, see the *System Options Menu* and the *KCU Messages and Errors* sections in the Getting Started chapter.

GEN Key

This key is available with KCU 3.00 series software only. The [GEN] (Time Code Generator) key provides access to the system reference and timing options.

For further information, see the *Time Code Generator GEN Options Menu* and the *Using Time Code Registers* sections in the Getting Started chapter.

FILM Key

The [FILM] key changes the time code display from *Hours:Minutes:Seconds:Frames* to *Feet and Frames*. Use this if you prefer feet and frame operation to change the numeric properties of the KCU to a film-style environment.

SETUP Key

The KCU has a comprehensive setup procedure for customizing the system for a particular mode, transport or application.

For further information, see the discussion of the [SETUP] key in the *KCU Options Menus* section in the Getting Started chapter.

TRKS Key

Use the [TRKS] key to record enable specific tracks on a tape or video machine. This feature generally is used on serially controlled machines.

1. Press the [TRKS] key to enter track select mode.

2. Press the appropriate machine select key [A-F].

3. Press the corresponding calculator key (1-4, etc.), of the tracks to enable.

    The [0] key arms the video track. The [9] key puts a machine into assemble.

When a track is enabled,

*   The track number is displayed

*   A line (–) is displayed if the track is safe

*   XXX indicates that the track is safe or unavailable

For further information, see the *Tracks Options Menu* section in the Getting Started chapter.

TRAN Key

Press [TRAN], then a machine select key [A-F]. The display indicates the selected transport type, the Lynx-2 time code module software version, the time code frame rate, capstan control (resolved or wild), and track select mode (KCU or Local).

For further information, see the *TRAN Options Menu* section in the Getting Started chapter.

EVNT Key

The [EVNT] key accesses KCU GPI relays. GPI relays can be made to operate or follow several internal time code registers. In this mode, the relays follow the edit in point. When the in point is changed, the GPI execution point changes with it.

Each GPI has a Preroll and Duration register. The Preroll register is used to advance the closure time to allow for slow start of externally triggered devices. Duration can be set to suit the closure type required.

The following transport keys affect GPI operation:

STOP   Takes the GPI offline.

PLAY   Sets the GPI to ready or active.

REH   Rehearses the closure.

Default setting for the GPIs is Auto-set.

For further information, see the *EVNT Setup Options Menu* and the *Using Time Code Registers* sections in the Getting Started chapter.

LIST Key

This function is not currently in use.

MEM Key

The [MEM] or Memory register key is used with the calculator keypad. Use [STO] to store time code numbers to a memory register and [RCL] or [MEM] to recall numbers from a memory register.

For further information, see the *Using KCU Memory* section in the Getting Started chapter.
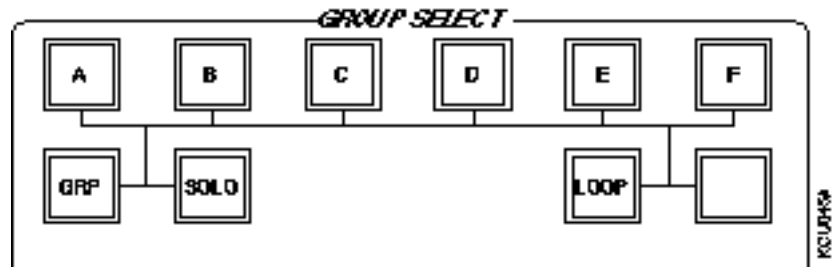
Machine (Group) Select Keys

Figure Chapter 6 -6. Machine (Group) Select Keys

A-F Machine (Group) Select Keys

The KCU can control up to six machines that are assigned to the machine (group) select keys A-F.

The Time Code Generator (TCG) allows the [GEN] key to be considered as a machine when the SSU is used with the KCU (K330). When the SSU is in use, the [GEN] key controls the LTC and the MTC generators of the System Supervisor Unit.

The six machines and the TCG may be operated individually in solo mode, or synchronously in group mode.

GRP (GROUP) Key

Press [GRP] to operate selected tape machines as a synchronous group. When group is active, the GRP LED and the selected machine keys (A-F, GEN) are lighted. See *Grouping Machines with the KCU* in the Getting Started chapter for more information.

SOLO Key

Press [SOLO] and the appropriate machine select key [A-F] to place a machine in solo mode. The transport motion control keys control only the soloed machine. All other machines remain in their previous state. Press the [SOLO] key a second time, or the [GRP] key, to switch back to group mode.

LOOP Key

Press the [LOOP] key to select Edit Loop or Cycle mode. The [LOOP] key continuously cycles an edit until it is interrupted by a transport command.

BANK Key

The [BANK] key is not used at this time.

Calculator Keys

The Calculator keys offer the following functional categories:

- Numeric keypad

- Register and memory access (see *Using Time Code Registers* in the Getting Started chapter for information on using calculator keys to access register values)
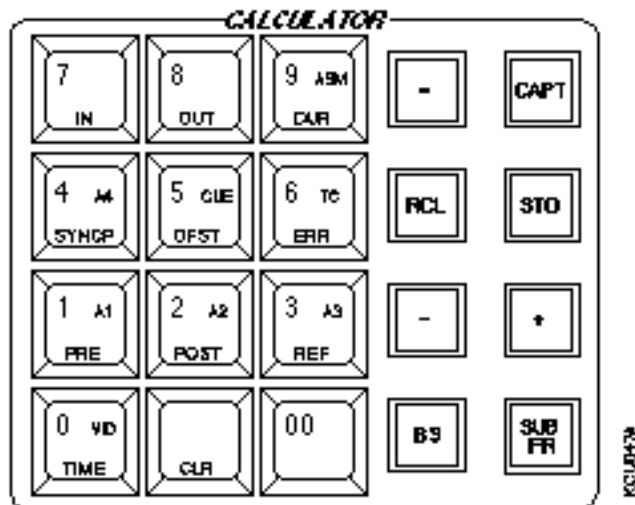
- Auxiliary function keys

Figure Chapter 6 -7. Calculator Keys

The calculator is active whenever you press a numbered key. Calculator numbers are entered from left to right, with the most significant digit first. Leading zeros are ignored. Auxiliary function keys [+], [–], and [=] are used with the calculator.

When a numbered key is pressed after [TRIM], [CAPT], [RCL], or [STO], the alternate function of the numbered key becomes active.

When any of the calculator keys (00-9) are pressed, the digit is displayed in the calculator scratch pad located in the lower right area of the display screen. The calculator can be used to perform time code additions or subtractions. In the following example, an addition is performed.

1. Enter the following number with the calculator keys:
   11270603

2. Press the [+] (PLUS) key.

    The operation selected is displayed.

3. Enter a time of 10 seconds with the calculator keys:
      1000

4. Press the [=] (EQUAL) key.

    The sum is displayed in the lower right portion of the display.
      11:27:16:03

Accessing Time Code Registers

Calculator keys provide access to the time code register values.
Values may be stored to or recalled from any of the registers. See
Using Time Code Registers in the Getting Started chapter for
information on using calculator keys to access register values.

The registers available correspond to the numbered (00-9)
calculator keys:

00/ZERO   Local Zero register
0/TIME   Time register
1/PRE   Preroll register
2/POST   Postroll register
3/REF   Reference Sync Point register
4/SYNCP   Source Sync Point register
5/OFST   Offset register
6/ERR   Error register
7/IN   In Point register
8/OUT   Out Point register
9/DUR   Duration register

00–ZERO Key

The [00] key inserts two zeros into the display. This is
particularly useful when entering time code numbers. The [00]
key also provides access to the Local Zero register.

CLR Key

Press [CLR] to perform the following functions:

*   Exit calculator mode and return to the normal operating
    display.

*   Clear incorrect entries for any key or function.

*   Clear the data entry buffer. If a number is entered but not yet
    stored to a register, the original register value is retained.

*   Clear registers. To clear a specific register, simultaneously
    press the [CLR] key and the calculator key for the register to

be cleared. For example, press and hold the [CLR] key and press [OFST] to clear the offset register for a slave machine.

- Clear the transport type data buffer and return to default parameters. Solo the machine. Press and hold the [CLR] key and press [TRAN] to clear the transport register for a particular Lynx-2 module.

0–TIME/VID Key

When not used as a [0] in calculator mode, the [TIME] key provides access to the Time register. The Time register is used to store a time code value to the Lynx-2 or Lynx-2 Film Module.

Press the [VID] key in TRKS mode to select and deselect the video track record enable on a video machine.

1–PRE/A1 Key

When not used as a 1 in calculator mode, the [PRE] key provides access to the Preroll register. The preroll position is the time code location that the KCU uses to cue the master machine during locate and edit functions

The Preroll register may be accessed during store, recall, and trim operations.

Press the [A1] key in TRKS mode to select and deselect the A1 (Audio Channel 1) track record enable.

2–POST/A2 Key

When not used as a 2 in calculator mode, the [POST] key provides access to the postroll register. The KCU uses the value in the Postroll register to calculate the postroll time code position at the end of an edit sequence.

Press the [A2] key in TRKS mode to select and deselect the A2 (Audio Channel 2) track record enable.

3–REF/A3 Key

When not used as a 3 in calculator mode, the [REF] key provides access to the Reference Sync Point register during store, recall, and trim operations.

Press the [A3] key in TRKS mode to select and deselect the A3 (Audio Channel 3) track record enable.

4–SYNCP/A4 Key

When not used as a 4 in calculator mode, the [SYNCP] key provides access to the Source Sync Point register for a specified machine. Each source machine in the system has a separate sync point register. The Source Sync Point registers may be accessed during store, recall, and trim operations.

Press the [A4] key in TRKS mode to select and deselect the A4 (Audio Channel 4) track record enable.

5–OFST/CUE Key

When not used as a 5 in calculator mode, the [OFST] key provides access to the Offset register for a specified machine.

Press the [CUE] key in TRKS mode to select or deselect the CUE track record enable on a video machine.

6–ERR/TC Key

When not used as a 6 in calculator mode, the [ERR] key provides access to the machine offset Error register. Press [RCL], then [ERR], to display the Error register for a selected machine. The error is automatically displayed in status mode.

Press the [TC] key in TRKS mode to select and deselect the time code track record enable for a video transport.

7–IN Key

When not used as a 7 in calculator mode, the [IN] key provides access to the In Point register.

8–OUT Key

When not used as an 8 in calculator mode, the [OUT] key provides access to the Out Point register.

9–DUR/ASM Key

When not used as a 9 in calculator mode, the [DUR] key provides access to the Duration register during store, recall, and trim operations.

Press the [ASM] key in TRKS mode to select or deselect the Assemble function for a video machine.

= (EQUAL) Key

The [=] (equal) key is used in conjunction with the [+] and [–] keys to perform time calculations. It is used to complete a calculation sequence. When pressed, the sum or difference is calculated and displayed. The value is displayed in the time code format of the master machine.

+ (PLUS) Key

The [+] or [PLUS] key is used with the [=] key to combine two values.

Additions are computed in frames and displayed in the code type or format of the master machine. Press [CLR] to begin a new calculation or to return to the normal operating display. The arithmetic is correctly performed even if the numbers entered are incorrectly formatted. For example, if you enter 1:65:43, it will be translated to 2:06:13 (30 frame calculation) during the calculation.

The [+] key is also used in setup mode to select the next option in a menu. It is used in trim mode to bump or increase the numerical value stored in a selected register by the trim register value.

– (MINUS) Key

The [–] or [MINUS] key is used with the [=] key to subtract one time code value from another. Subtractions are computed in frames and displayed in the code type or format of the master machine. After performing the calculation, it may be stored to a register. Press [CLR] to begin a new calculation or return to the normal operating display.

The [–] key is used in setup mode to select the previous option in a menu, and in trim mode to bump or decrease the numerical value stored in a selected register by the trim register value.

If you subtract a large number from a smaller one, the result will be displayed as a negative time code number.

KCU Auxiliary Function Keys

Auxiliary function keys perform arithmetic operations with the calculator keys and in combination with other keys to facilitate KCU operations. Auxiliary function keys are located at the right of the calculator keys.
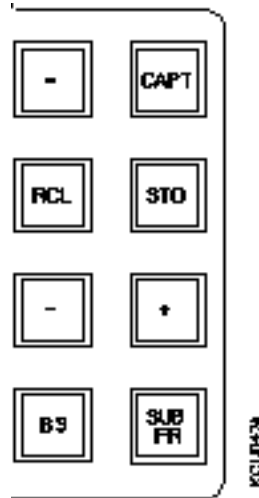

Figure Chapter 6 -8. Auxiliary Function Keys

RCL Key

The [RCL] key recalls time code values that are stored in the KCU registers and memories. Some registers, such as , sync point and offset, are specific to each machine. To display the sync point or offset value for a machine, solo the machine or select status mode before recalling the register.

1. Press [RCL] to enter Recall mode.

    [RCL] key flashes. "Recall reg or mem" is displayed.

2. Press [IN].

    The value stored in the In Point register is displayed.

STO Key

The [STO] key is used to store time code values in KCU registers and memories.

1. Press the [STO] key.

    Store reg or mem is displayed.

2. Press one of the calculator keys to store the value in the calculator data entry buffer to the corresponding register.

3. Press the [MEM] key, then a number representing the memory location.

4. Press [CLR], or press [STO] again, to cancel the command.

The time code value to be stored may be captured, entered, or calculated. If the [CAPT] key is used to capture a time code value, the store function is automatically invoked.

The [STO] key can be used to store a value to any of the following registers:

>   Time
>   In Point
>   Out Point
>   Duration
>   Sync Point
>   Offset
>   Preroll
>   Postroll
>   Reference
>   Rollback

For further information, see *Using Time Code Registers* in the Getting Started chapter.

CAPT Key

The [CAPT] key captures the current time code value for storage in any of the KCU registers or memories. When you press the [CAPT] key, the value of the time code shown in the display is captured.

Press a register or memory key to store the time code value. If you do not want to store or save the value in a register, press [CLR], or press [CAPT] a second time.

SUBFR Key

The KCU stores time code values in high resolution format. In normal operation, the high resolution or subframe content of all time code numbers except for the error display is suppressed.

Press the [SUBFR] key to enter or trim the subframe information. SUBFR is commonly used when adjusting offsets between machines. This can be done dynamically so that it is possible to easily adjust the positional relationship between machines until the audio phases.

The KCU defaults to a subframe trim value of 01 subframes.

For further information, see *Trimming an Offset* in the Getting Started chapter.
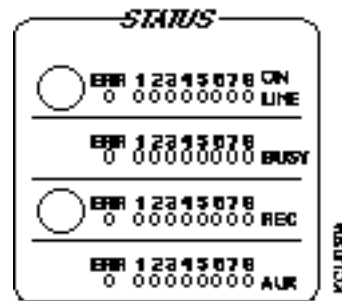
KCU Status Keys and LED Indicators

Figure Chapter 6 -9. Status Keys and LED Indicators

ON LINE (Poll) Key and LEDs

Press the yellow [POLL] key to cause the KCU to establish communications with the Lynx-2 Modules by polling the serial communications bus looking for connected devices. As each module responds to the KCU, the corresponding On Line LED is lighted. On power up, the KCU automatically polls any Lynx-2 Module connected on the serial bus.

After polling, the KCU displays the message *Press the GRP Key and Add Groups in Order of Priority*.

If no On Line LEDs stay illuminated when you press the status [POLL] key, the KCU did not find any modules when it polled the serial bus. Common causes include a faulty RS422 connection between the KCU and Lynx-2 Modules, or Lynx-2 Modules assigned to the same serial address.

If a serious serial communications error exists, the On Line ERR LED begins to flash along as well as an On Line LED corresponding to the Lynx-2 Module(s) involved. This error might result from turning off the power of a Lynx-2 Module that is online with the KCU, or from a bad connection somewhere along the RS422 connection chain. Press the status [POLL] key to poll again the serial bus. This should clear the error condition and re-establish communications between the KCU and all Lynx-2 Modules properly connected to it.

Busy LEDs

The individual Busy LEDs indicate when the various transports in the system are busy executing an action. As with On Line LEDs, each Busy LED corresponds numerically to the serial addresses assigned to the connected Lynx-2 Modules.

A good example of the Busy LEDs is seen when you play two or more transports in the group. When Play is first initiated, the Busy LED is lighted for each of the active transports. As each transport is pulled into resolve and lock, the corresponding LED goes out. When all transports are locked, no LEDs are lighted. LL is displayed to indicate that all active transports are now synchronized.

REC (Record Enable) Key and LEDs

Use the red status [REC] key with machine select keys to specify which transports in the system will be issued a Rehearse or Record command. During the record portion of a programmed edit, or during a manually initiated record condition, the status [REC] key and the motion control [REC] key both are lighted.

To record enable a specific transport, press and hold the status [REC] key while you press the machine select key A-F corresponding to the desired transport.

To remove the transport from record enable status, press the machine select key [A-F] a second time.

When a transport is in record enable state, the KCU issues record and rehearse commands to the Lynx-2 Module controlling the transport. Unless the KCU supports serial track arming for that transport, you will need to record enable individual tracks or channels of the transport on the transport itself.

The REC (Record Status) LEDs indicate when a transport has been record enabled. RED LEDs correspond numerically to the serial addresses assigned to the connected Lynx-2 Modules.

AUX LEDs

The AUX LEDs indicate when any slave or source transport has a non-zero offset. When indicating an offset, the AUX LEDs correspond numerically to the serial addresses of the Lynx-2 Modules.

The AUX LEDs also display the relative velocity of a transport in shuttle and jog modes. This display mode temporarily overrides the normal indication of offsets.

When in shuttle mode, the transport is stationary. Only the center AUX LED is lighted. If you turn the control wheel clockwise, the transport begins to move forward. Additional LEDs at the right of the center AUX LED light up in proportion to transport shuttle speed. As shuttle speed increases, more LEDs are lighted until all four LEDs on the right are lighted. As the speed increases beyond this point, LEDs begin to go out, starting at the center, until only

the right most LED is lighted. The display for the reverse direction is exactly the same except that it uses the AUX LEDs left of center.

Special Function Keys

Special function keys mark current time code numbers showing in the KCU display into the following registers:

- In Point register

- Out Point register

- Reference Sync Point register

- Source Sync Point register

- Cue Point register

Figure Chapter 6 -10. Special Function Keys

Whenever you press a special function key, the current time code number in the KCU display is captured and stored automatically into the indicated register.

IN Key

Press the special function [IN] key to store the current reference machine time code number into the In Point register. The [IN] key is illuminated whenever there is an active value in the In Point register.

OUT Key

Press the special function [OUT] key to store the current Reference machine time code number in the Out Point register. The [OUT] key is illuminated whenever there is an active value in the Out Point register.

REF SYNC Key

The special function [REF SYNC] key provides access to the Reference Sync Point register.

SRC SYNC Key

The special function [SRC SYNC] key provides access to the Source Sync Point register.

CUE PT Key

The special function [CUE PT] key provides access to the Cue Point register.

END PT Key

The special function [END PT] key is not in use in this release.

Macros

Macro keys store and recall a series of key presses.

Figure Chapter 6 -11. Macro Keys

To define a macro,

1. Press the macro key [F1-F6] that will contain the macro.

2. Each subsequent keystroke is remembered, in sequence, and stored in the macro key.

3. To end storage of a macro keystroke sequence, again press the macro key [F1-F6].

A macro sequence may not be included or nested within another macro sequence.