

Cameo SV Operations Guide



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Table of Contents

Overview	1
Installation	2
Inputs/Outputs	2
Initial Installation.....	2
Reference.....	2
Audio	3
MIDI.....	3
SETUP.....	4
The Physical/Logical Menu.....	4
Selecting an Input Number.....	5
Selecting a Logical Source	5
Selecting a Channel Number.....	5
Setting all Inputs to "Free"	6
The Input Control Menu.....	7
Setting the Mic/Line status for Analog Input 1	7
Setting Analog Input Gain.....	7
Enabling Sample Rate Conversion.....	8
Selecting a reference.....	8
Restoring the mixer to factory defaults	8
Using the Cameo SV	9
The Fader Strip.....	9
Navigating the Menus.....	10
The Home Menu.....	11
Monitor Source.....	11
Mon/Mix.....	11
Faders	12
Mute.....	12
Feature Enable Matrix	12
Phase Inversion.....	12
Compressor/Limiter (CL).....	12
Equalization (EQ).....	12
Fulltime Live (FTL)	13
Master Fader (MF)	13
VU meters.....	13
Monitor Level Display	14
Quick-Access Buttons	14
Increment/Decrement of Monitor Level.....	14
Surround Field VU Display.....	14
Compressor/Limiter Menu	15
EQ Menu	15
MIDI enable/disable	15
The Main Menu	16
(F1) Monitor Mute	16
(F2) Fader Control.....	16

(F3) Memory	17
(F4) Assign	17
(F5) Monitor Select	17
(F7) Effex	17
(F8) Setup	17
(F9) Tone	17
(F10) Edit	17
(F11) Bus Select	17
(F12) Run	17
The Monitor Mute Menu	18
The Fader Control Menu	19
(F1) VTRA	20
(F2) VTRB	20
(F3) VTRC	20
(F4) VTRD	20
(F5) AUX	20
(F6) NLE	20
(F7) Record	20
(F8) Router	20
(F9) Avid Remote	20
(F10) Low Limit	20
(F11) Home	21
(F12) Shift	21
(Shift +F1) VHS	21
(Shift +F2) PC	21
(Shift +F3) CD	21
(Shift +F4) DAT	21
(Shift +F5) Bank 1	21
(Shift +F6) Bank 2	21
(Shift +F7) Bank 3	21
(Shift +F8) Bank 4	21
(Shift +F9) Unity	21
(Shift +F10) High Limit	21
The Low Fader Limit Menu	22
Setting a Low Fader Limit	22
Clearing a Low Fader Limit	23
Shortcut to the High Fader Limit Menu	23
The High Fader Limit Menu	24
Setting a High Fader Limit	24
Clearing a High Fader Limit	25
Shortcut to the Low Fader Limit Menu	25
The Memory Menu	26
Saving a mixer configuration to memory	26
Recalling a mixer configuration from memory	27
Overwriting the contents of a memory	27
Renaming a memory	27

Deleting a memory	27
Deleting all memories.....	27
The Assign Menu	28
(F10) All Off	28
(F11) Non Fader Off	28
(F12) Home	28
The Monitor Select Menu.....	29
(F1) VTRA	29
(F2) VTRB	29
(F3) VTRC	29
(F4) VTRD	30
(F5) AUX	30
(F6) NLE	30
(F7) Record	30
(F8) Router	30
(F9) Mix 2CH.....	30
(F10) Mix 6CH.....	30
(F11) Home	30
(F12) Shift	30
(Shift +F1) VHS	30
(Shift +F2) PC	30
(Shift +F3) CD	30
(Shift +F4) DAT.....	31
(Shift +F5) Mix 1-2	31
(Shift +F6) Mix 3-4	31
(Shift +F7) Mix 5-6	31
(Shift +F8) Mix 7-8	31
(Shift +F9) Mix Mono.....	31
(Shift +F11) Menu Bus	31
The EFX Submenu	32
(F1) EQ.....	32
(F2) Compress Lim	32
(F3) Delay	32
(F4) Surround Field.....	32
(F5) Pitch Shift.....	32
(F12) Home	32
The Setup Menu	33
(F1) Physical/Logical	33
(F2) Fader Types	33
(F3) Input Control	33
(F5) Misc. Stuff	33
(F6) Clone Cameo	33
(F9) Preread On.....	34
(F10) Preread Off	34
(F11) Table Crosspoint Init.....	34
(F12) Home	34

The Tone Menu	35
The Edit Menu	36
The Bus Assign Menu	37
(F9) Stereo	37
(F10) Surround	37
(F11) Mono	37
The EQ Menu	38
Selecting a source to Equalize	39
Using the 3-Band Equalizer	39
Adjusting the 3 Band Equalizer	40
Adjusting the Notch Filters	40
Adjusting the High Pass Filter	40
Resetting all EQ Paramters to Unity	40
Saving EQ settings in memory	41
Copying EQ settings from one channel to another	41
The Compressor/Limiter Menu	42
Selecting a source to Compress	43
Adjusting the Compressor/Limiter parameters	43
Resetting all Compressor Paramters to Unity	44
Saving C/L settings in memory	44
Copying C/L settings from one channel to another	44
The Delay Menu	45
Assigning a delay value to a source	45
Clearing all delay values	45
The Surround Field Menu	46

Overview

Cameo SV is the **Studio Version** of the Cameo LRC **Location Recording Mixer**.

The Cameo SV answers the need for a comprehensive digital audio mixer designed to meet the unique requirements of nonlinear editing (NLE) systems. Unlike music-industry mixers, the Cameo takes advantage of all analog and digital I/O, as well as providing a midi interface to the NLE. Furthermore, in most installations Cameo's multiple outputs may eliminate the need for audio distribution amplifiers.

Don't be fooled by Cameo's compact size. Though the Cameo control panel has 8 hardware faders, up to the mixer's maximum of 32 sources may be mixed simultaneously, as a source need not be assigned to a hardware fader to be active.

Sharing some of the unique functionality found in other Zaxcom digital audio mixers, Cameo also makes an ideal mixer for compact linear editing environments.

Above all, Cameo is designed to be easy to use, and offers the operator maximum creative control. Virtually every mixer function can be controlled either via a combination of dedicated and softkeys on the mixer control panel, or via the supplied mouse.

Cameo is packed with features, and is unique among digital post production mixers. In order to get the most out of the system, please take some time to review this manual prior to use, and keep it handy while you get accustomed to the interface.

Installation

Inputs/Outputs

Initial Installation

1. Connect the supplied Microsoft mouse to the mouse connector, located on the right side of the Cameo mixer. Note that the icon on the mouse plug should be facing up.
2. Connect the supplied display cable to the DB25 connector on the rear of Cameo labeled "DISPLAY". Connect the other end to the DB25 connector on the Display box.
3. Connect the DC power supply to the four-pin XLR connector on the rear of Cameo.
4. Connect the AC power cable to the DC power supply. The power supply may operate in either a 120 or 240 Volt AC environment.

Note: Cameo has no power off switch. The unit is designed to operate 24 hours a day. Powering down is acceptable, however, as all memory is battery backed-up.

Reference

For reliable digital audio fidelity, the Cameo must be externally referenced to a stable AES audio source. There are two methods for doing this:

- Via Cameo's dedicated external reference input, which appears on the same group of pins on both of the two digital audio input connectors. This is the preferred method.
- Via Cameo's digital inputs 9 and 10

Note: The selected reference input is set in the Input Menu, which is accessed by pressing the Setup key on the control panel.

Audio

Cameo has 32 inputs. Channels 1 thru 8 are always analog. Channels 9 thru 24 are always digital. All outputs are available simultaneously as both analog and digital. Eight mix outputs are available as well as six monitor outputs. The level of the six monitor outputs is controlled by the monitor level adjustment pot on the Cameo control panel.

Note: The AES Monitor Outputs are designed to feed digital audio scopes, VU meters, or analyzers. These outputs are always at unity gain, and are not affected by the adjustment of the Monitor Level pot on the Cameo control panel..

For a standard stereo monitoring configuration, only the first two analog monitor outputs need to be connected to the monitor speakers. In a surround-sound environment, all six outputs should be connected as follows:

Mix/Mon 1 = front left
Mix/Mon 2 = front right
Mix/Mon 3 = front center
Mix/Mon 4 = sub woofer
Mix/Mon 5 = rear left
Mix/Mon 6 = rear right

Please refer to the enclosed connector pin-out chart to wire all inputs and outputs.

Note: All of Cameo's AES inputs and outputs are 110 ohm balanced. If connection to 75-ohm coax is required, Zaxcom can supply a 16 BNC converter panel. Alternatively, standard DATS adapters may be used. Please contact the Zaxcom factory for details.

MIDI

If your NLE supports MIDI control of its internal mixer, connect the MIDI control pins on the Cameo to the designated connections on the NLE. Please consult the manual of the nonlinear edit system for connection information. While PC-based systems often support direct connection, Macintosh-based system usually require a third-party RS422 to Midi adapter.

SETUP

Though the eager user may wish to begin exploring the Cameo upon first power-up, it is highly recommended that the following menus be visited first.

The Physical/Logical Menu

ASSIGN INPUT CHANNEL TO PHYSICAL DEVICE								HOME _{F11}
INPUT 01		SOURCE UTRA		CH# 1				
1	2	3	4	5	6	7	8	INPUT SELECTOR
9	10	11	12	13	14	15	16	
17	18	19	20	21	22	23	24	
25	26	27	28	29	30	31	32	
VTRA	VTRB	VTRC	VTRD					FREE ALL _□
VHS	PC	RTR	NLE					SOURCE SELECTOR
AUX1	REC	CD	DAT	FREE				
1	2	3	4	5	6	7	8	

The **Physical/Logical** menu is used to associate physical inputs with logical devices, and should be programmed immediately following installation. A logical source may have from one to eight channels associated with it. Taking the time to correctly program this menu helps ensure consistent and trouble-free operations.

To access the Physical/Logical menu, do one of the following:

- Press the **Setup** function key on the Cameo control panel to open the **Setup Menu**. Then press the **Physical/Logical (F1)** softkey to open the **Physical/Logical Menu**.
- Right-click the mouse to open the **Main Menu**. Use the mouse to move the cursor to the cell labeled "Setup" and left-click once. Use the mouse to move the cursor to the cell labeled "Physical/Logical" and left-click once.

Note: All programming operations in this menu are accomplished with the mouse.

A left-to-right approach should be taken to the programming of this menu, in that:

1. First select the Input Number to be programmed.
2. Then select the Logical Device name to associate with it.
3. Finally, select the Logical Device channel number to associate with it.

Selecting an Input Number

There are two methods to selecting input numbers:

- Left-click on the arrow either above or below the displayed **Input Number** to increment or decrement the input number in single units.
- Left click on one of the numbered cells to instantly jump to that **Input Number**.

Selecting a Logical Source

There are two methods to selecting Logical Sources:

- Left-click on the arrow either above or below the displayed **Source Name** to increment or decrement through the list of source names.
- Left click on one of the "source selector" cells at the bottom of the display to instantly assign that source to the displayed **Input Number**.

Selecting a Channel Number

There are two methods to selecting Logical Channel Numbers:

- Left-click on the arrow either above or below the displayed Channel Number to increment or decrement the Channel # in single units.
- Left click on one of the numbered "source selector" cells at the bottom of the display to instantly assign that **Channel Number** to the displayed **Input Number** and **Logical Source**.

Setting all Inputs to "Free"

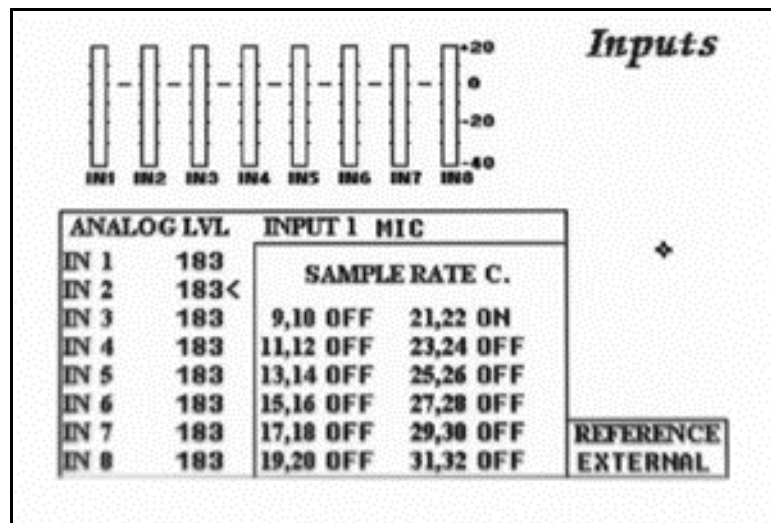
To start from "scratch" with no Logical/Physical relationships, do the following:

1. Use the mouse to precisely position the cursor over the small square in the "Free All" cell.
2. Left-click once

Note: There is no undo for this function.

Important: Assign the Logical Source "Free" to all unwired input channels

The Input Control Menu



The **Input Control** menu contains input-related settings for analog input gain, sample-rate conversion, and system reference.

Setting the Mic/Line status for Analog Input 1

Analog Input 1 is designed to accept either a microphone or balanced line-level input. To select between the two types of inputs, do the following:

1. Use the mouse to position the cursor on the word "**Input 1**" in the center of the menu.
2. Left-click to change the designation between **Mic** and **Line**.

Setting Analog Input Gain

The eight analog inputs have individual gain trims. To adjust the gain of the analog inputs, do the following:

1. Feed a calibrated external tone signal to each analog input.
2. Note the level on the associated VU display at the top of the screen.
3. Use the mouse to position the cursor on a channel to be adjusted. Left-click to position the pointer to that channel.
4. Rotate the control panel's softknob to adjust the input to 0 dB.

Note: The input gain values are simply a relative indication of input level adjustment. Each increment is equal to approximately one-half of a dB.

Enabling Sample Rate Conversion

Digital inputs that are not clocked at the same rate as the reference need to be sample rate converted to avoid clicks and pops. Sample rate conversion is assigned on a channel-pair basis as follows:

1. Use the mouse to position the cursor on a channel pair to be adjusted.
2. Left-click to toggle the on/off state of the sample rate converter.

Selecting a reference

For reliable signal integrity, Cameo must be locked to a stable AES reference. The system will lock to the following sources:

- External (via dedicated digital audio input)
- AES inputs 9 and 10 (which may also be used for mixing)
- Internal (Crystal locked for standalone operations...not recommended)

To select the reference source:

1. Use the mouse to position the cursor on the **Reference** cell.
2. Left-click to increment through the list of three reference modes.

Restoring the mixer to factory defaults

For a complete initialization of Cameo's memory registers, perform the following operation:

1. Power-down the mixer.
2. Press and hold the **MUTE** key.
3. Power-up the mixer.
4. When the display "comes alive," release the **MUTE** key.

Using the Cameo SV

The Fader Strip

Pictured below is one of the 8 identical Cameo Fader Strips.

Signal Presence LED →

Illuminates at an input level of -30 dB and above.

Bus Assign Keys →

To assign an input channel to a Mix Bus output, press (illuminate) the corresponding Bus Key.

Channel Label →

Identifies the source currently assigned to a fader.

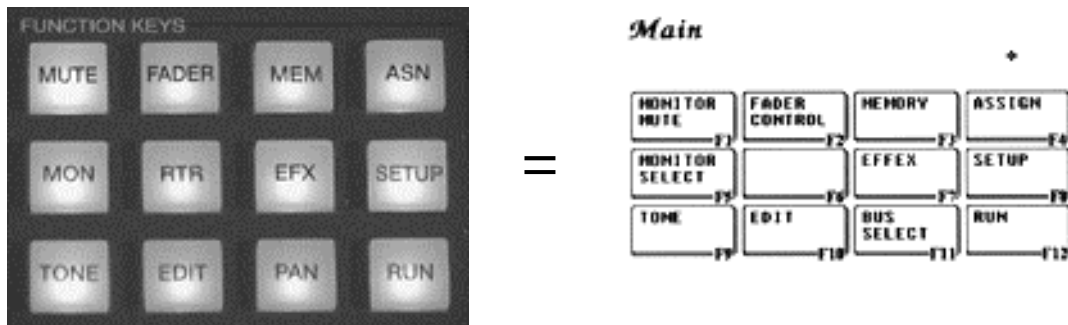
Fader w/LED level indication →

LED shows true electrical level of the source. If Fader position doesn't match LED, slowly move the fader to align. No changes in level will occur until the two are aligned.



Navigating the Menus

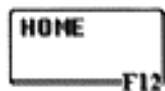
The Cameo control interface has been designed so that virtually every function may be accessed either by pressing a few buttons on the control panel, or by utilizing the mouse. Pressing the **right** mouse button either once or twice will take you to the **Main Menu**, which duplicates the dedicated function keys on the Cameo control panel. From there, various function and sub menus may then be selected and accessed by pressing the left mouse button. See below:



The number of right mouse clicks necessary to access the Main Menu depends on how many levels deep you may be in the Cameo menu tree. In no instance, however, will you ever be more than 2 right clicks away from the Main Menu.

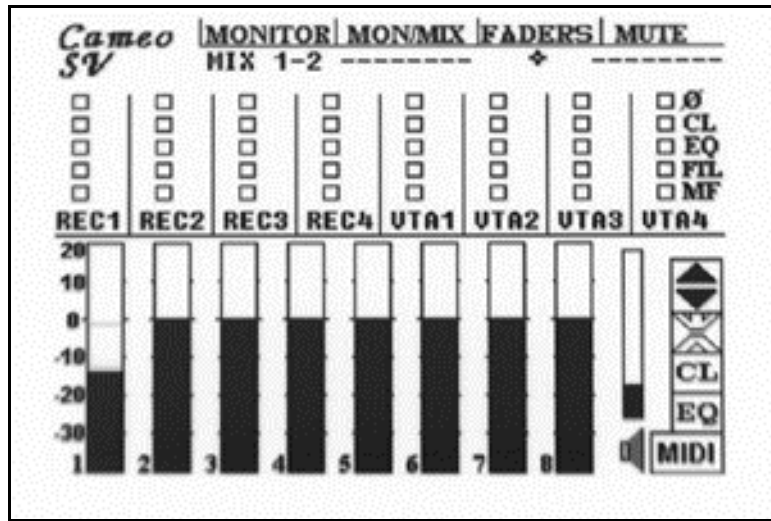
Note: From either the *Home* or *Main* menu, right clicking will toggle the menu between either *Home* and *Main*.

Once in a Sub or Function Menu, the user may utilize either the mouse or the Soft Keys on the control panel to continue navigating or make adjustments. As with the Function Keys, the Soft Keys are arranged to match the Cameo menu structure. Note the Soft Key hint at the lower right of each menu cell:



In the example above, pressing *F12* will open the **Home Menu**.

The Home Menu



At its most basic level, the **Home Menu** provides output metering for all 8 Mix Busses. However, this menu contains a great deal of other useful information and features.

For purposes of explanation, let's divide the menu into three sections from top to bottom. Starting along the top:

Monitor Source

Displays the current source that is being monitored. To quickly change the source, left click on the word "Monitor," which opens the **Monitor Menu**.

Mon/Mix

When the Cameo is being controlled by a linear editing system, this display gives the operator visual feedback on the state of preview switching. There are 8 dashes, representing each of the 8 Mix busses. A dash indicates that the RVTR is being monitored, while an asterisk (*) indicates that a particular Mix Buss is being monitored.

For example: Let's say that we are previewing an edit to Channels 3 and 4 of a master. During preroll, the Cameo should display all dashes, indicating that all channels of the RVTR are being monitored. At the edit point, the Cameo should display: --*-*---, indicating that Mix Busses 3 and 4 are being substituted for the RVTR's channels 3 and 4. All other channels from the RVTR are monitored. During postroll, the Cameo display should return to all dashes.

Faders

Left click on this designation to quickly jump to the **Fader Control Menu**, which is utilized for assigning logical sources to hardware faders.

Mute

Displays the current Monitor Busses that are set to mute. To quickly change the muting configuration, left click on the word "Mute," which opens the **Mute Menu**.

Feature Enable Matrix



This matrix is designed for quick enable/disable of key Cameo features. Left clicking on a box either enables or disables a feature, which for some features may be used to A/B a setting, such as EQ.

Each of the 8 faders is represented horizontally, while the feature selections are arranged vertically as follows (top to bottom):

- Phase Inversion
- Compressor/Limiter
- Equalization
- FullTime Live
- Master Fader

Phase Inversion

Enabling this feature inverts the audio phase of the respective channel 180 degrees.

Compressor/Limiter (CL)

Enables/Disables the Compressor/Limiter for the respective channel.

Equalization (EQ)

Enables/Disables EQ for the respective channel.

Fulltime Live (FTL)

Instructs the system to lock the designated channel to the Fader. Channels that are set to **FullTime Live** will not be relocated when assignments are made in the **Fader Control Menu**.

Note: Recalling Banks 1-4 overrides the FTL settings

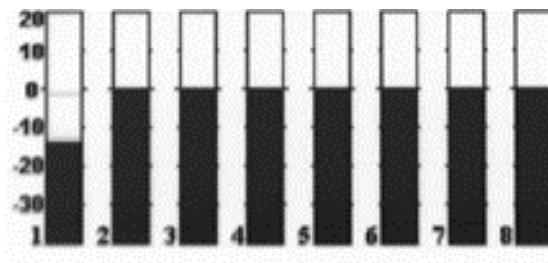
Master Fader (MF)

Assigns the respective channels to the Cameo's Master Fader, permitting single-handed fades of multiple channels. There are two modes of Master Fader operation, designated by the type of highlight achieved by left-clicking on the square:

- Solid box: Indicates that when the Master Fader is in its full upward position, the gain of the corresponding channel will match the mechanical position of the fader.
- Down Arrow: Indicates that when the Master Fader is in its full upward position, the gain of the corresponding channel will be at infinity (off).

Combining the two modes permits cross-fades between sources.

Note: Only sources currently assigned to faders are eligible to be controlled by the Master Fader.

VU meters

Displays the output levels of the 8 Mix Busses.

Monitor Level Display



Displays the relative output gain of the 8 analog Monitor Busses.

Quick-Access Buttons



This group of on-screen buttons afford the user quick access to a few key Cameo features:

- Increment/Decrement of Monitor Level
- Surround Field VU display
- Compressor/Limiter Menu
- EQ Menu
- MIDI control

Increment/Decrement of Monitor Level

Left-click on either the up or down arrow to gradually increment or decrement the analog monitor level.

Surround Field VU Display

Left-click on the icon to jump to the Surround Field Display.

Compressor/Limiter Menu

Left-click on **CL** to jump directly to the **Compressor/Limiter Menu**.

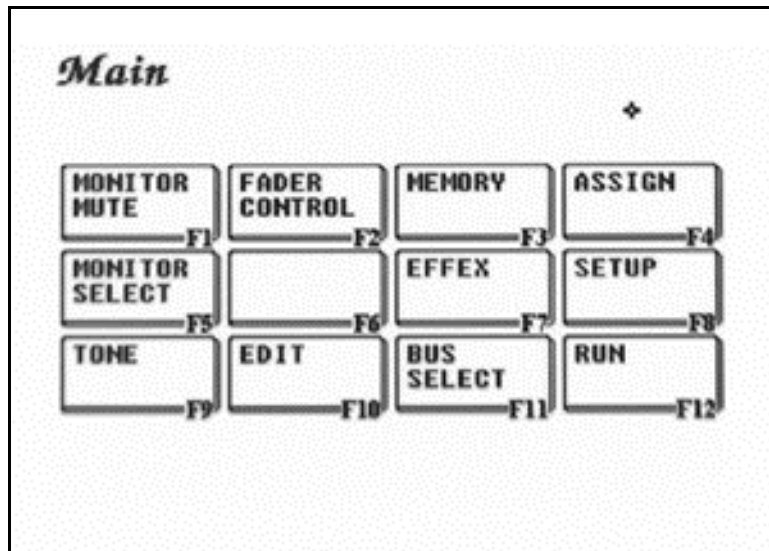
EQ Menu

Left-click on **EQ** to jump directly to the **EQ Menu**.

MIDI enable/disable

Left-click on **MIDI** to either enable or disable MIDI control. With Midi enabled, the 8 hardware faders are automatically reassigned for MIDI control of a supported NLE's internal mixer. Left-click on MIDI once again to return the mixer to its previous state.

The Main Menu



The **Main Menu** is used to access Sub Menus and Feature Menus.

To access this menu, right-click the mouse once or twice (depending on how deep you have navigated the Cameo menu tree).

Note: Cursor position is not critical when right-clicking.

To select any item in this menu you may:

- Press the corresponding Soft Key.
- Use the mouse to position the cursor over the desired item and left-click once.

(F1) Monitor Mute

Opens the **Monitor Mute** menu, where the user may designate a monitor channel(s) as being muted.

(F2) Fader Control

Opens the **Fader Control Menu**, where sources are assigned to the hardware faders.

(F3) Memory

Opens the **Memory Menu**, where user setups are stored and recalled.

(F4) Assign

Opens the **Assign Menu**, which gives the user a graphical representation and control over the relative electrical fader level of every input to the Cameo.

(F5) Monitor Select

Opens the **Monitor Select Menu**, where the monitor source is selected.

Note: The Monitor source may be different than the source(s) feeding the Mix Busses.

(F6)**(F7) Effex**

Opens the **Effex Submenu**.

(F8) Setup

Opens the **Setup Submenu**.

(F9) Tone

Opens the **Tone Menu**, where Cameo's tone generator is controlled.

(F10) Edit

Opens the **Edit Menu**, where editor interface settings are made.

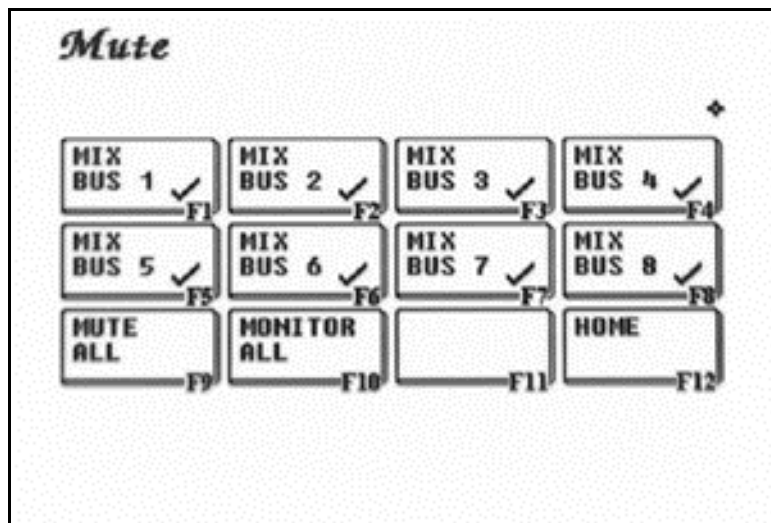
(F11) Bus Select

Opens the **Bus Select Menu**, where output bus assignments are designated for each source.

(F12) Run

Instructs the Cameo to **Run** its Timeline, found in the **Edit Menu**. This function may also be selected with a GPI trigger or RS422 command over the Editor port.

The Monitor Mute Menu



The **Monitor Mute** menu is used to designate on/off status for each of the 8 Monitor Busses.

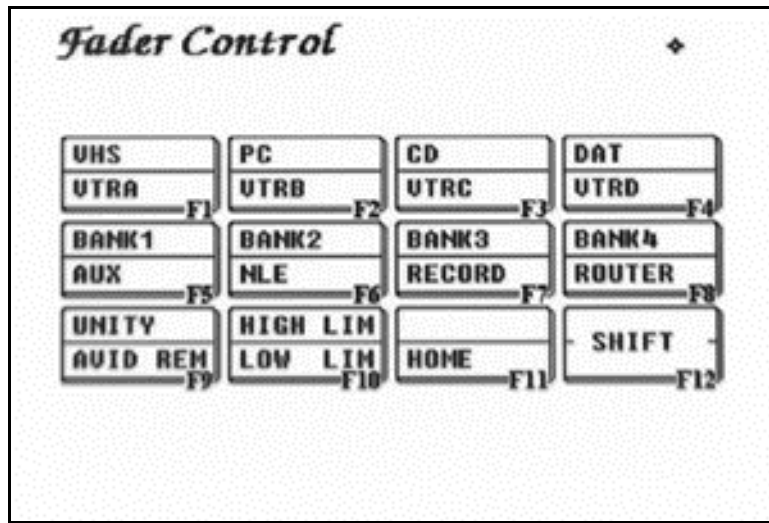
The presence of a check-mark in a cell indicates that the respective Bus is enabled, and the audio signal will pass as normal. The absence of a check-mark indicates that the respective channel is muted, and as such, no signal will pass.

Mute status is displayed at the top right of the **Home** and **Edit Menus**.

F9 and **F10** are shortcuts for either disabling or enabling muting on all monitor busses.

As with all Cameo menus, selections may be made with either the associated softkeys, or with the mouse, using a left-click.

The Fader Control Menu



The **Fader Control Menu** is used to assign logical sources to the 8 hardware faders. The menu also contains Zaxcom-exclusive functionality to enhance the operation of the hardware faders.

As sources are selected, they take the place of any sources currently assigned on the lowest-numbered faders and "push" the former sources to the right. All attributes of the relocated sources are retained during the move.

During this operation, sources at the highest-numbered faders are pushed off of the control panel **but remain active**.

Remember: A source need not be assigned to a hardware fader to contribute to a mix.

Once selected, all channels of a particular source will be assigned to faders.

For example: selecting **CD** (normally a 2-channel device) will assign Faders 1 and 2 to the CD player and push all other sources to the right by two faders. Alternatively, selecting **VTRC** (which could be a an 8-channel DA-88) will consume all 8 hardware faders, pushing all previous channels off the control panel.

Note: Selecting a source name that has no designated input channels (performed in the Physical/Logical Menu) results in no change to the mixer.

As with all Cameo menus, selections may be made with either the associated softkeys, or with the mouse, using a left-click. When using the softkeys, press and hold **F12** to select the sources in the upper region of each cell.

(F1) VTRA

Assigns VTRA to faders.

(F2) VTRB

Assigns VTRB to faders.

(F3) VTRC

Assigns VTRC to faders.

(F4) VTRD

Assigns VTRD to faders.

(F5) AUX

Assigns the AUX source to faders.

(F6) NLE

Assigns the output of the Non Linear Editing system to faders.

(F7) Record

Assigns the Record device to faders.

(F8) Router

Assigns the output of a facility Router to faders.

(F9) Avid Remote

Selects MIDI control mode for the faders. In this mode, all Bus Assignments lamps are extinguished and the Channel Labels are replaced with the designations MID1, MID2, MID3, and so on, which correspond to an NLE's internal mixing channels 1, 2, 3, etc. All attributes of the previously-assigned audio sources are retained.

Left-clicking on the **MIDI** button at the bottom right corner of the **Home Menu** restores the mixer to its previous state.

(F10) Low Limit

Opens the **Low Limit Menu**, where an electrical low limit may be designated for each fader.

(Refer to the section on the Low Limit menu for details about this feature)

(F11) Home

Selects the **Home Menu**.

(F12) Shift

Press and hold this key to access the shifted sources and functions, detailed below.

(Shift +F1) VHS

Assigns a VHS deck to faders.

(Shift +F2) PC

Assigns the output of a PC to faders.

(Shift +F3) CD

Assigns the CD player to faders.

(Shift +F4) DAT

Assigns a DAT recorder to faders.

(Shift +F5) Bank 1

Assigns Input Channels 1-8 to Faders 1-8.

(Shift +F6) Bank 2

Assigns Input Channels 9-16 to Faders 1-8.

(Shift +F7) Bank 3

Assigns Input Channels 17-24 to Faders 1-8.

(Shift +F8) Bank 4

Assigns Input Channels 25-32 to Faders 1-8.

(Shift +F9) Unity

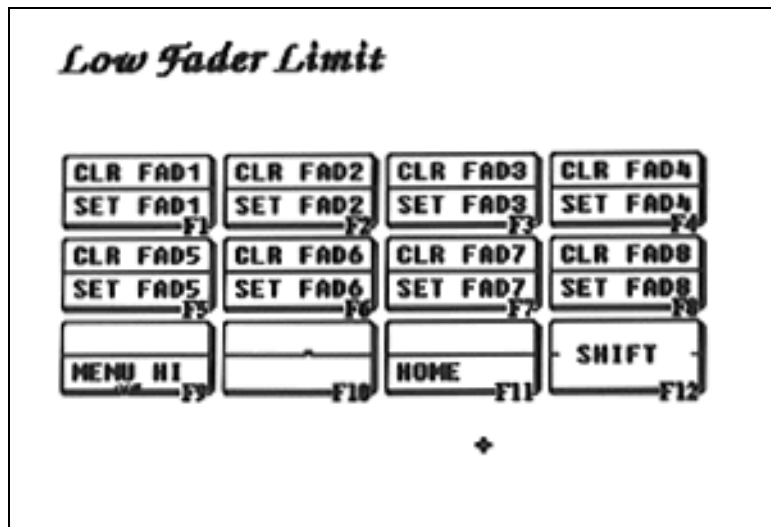
Selects the **Unity Menu**, where individual faders may be set to unity gain, regardless of the mechanical position of the fader.

(Shift +F10) High Limit

Opens the **High Limit Menu**, where an electrical high limit may be designated for each fader.

(Refer to the section on the High Limit menu for details about this feature)

The Low Fader Limit Menu



Fader Limits provide an accurate, repeatable method of electrically limiting fader travel. Replacing grease pencil marks, masking tape, and thumbs, the **Fader Limits** feature provides a modern solution for those times when it is desirable to limit fader travel in a live mix.

The **Low Fader Limit Menu** is used set an electrical low limit for each hardware fader.

Setting a Low Fader Limit

To set a low fader limit, first move a fader to a desired minimum level that you don't wish to exceed. Then do either of the following:

- Press a sofkey *F1-F8*, corresponding to faders 1 thru 8.
- Use the mouse to move the cursor to the appropriate "Set Fad x" cell, where "x" is the corresponding fader number. Left-click once.

Note: When a Low Limit is set, the corresponding fader's "LLIM" legend illuminates.

Clearing a Low Fader Limit

To clear a low Fader Limit, do either of the following:

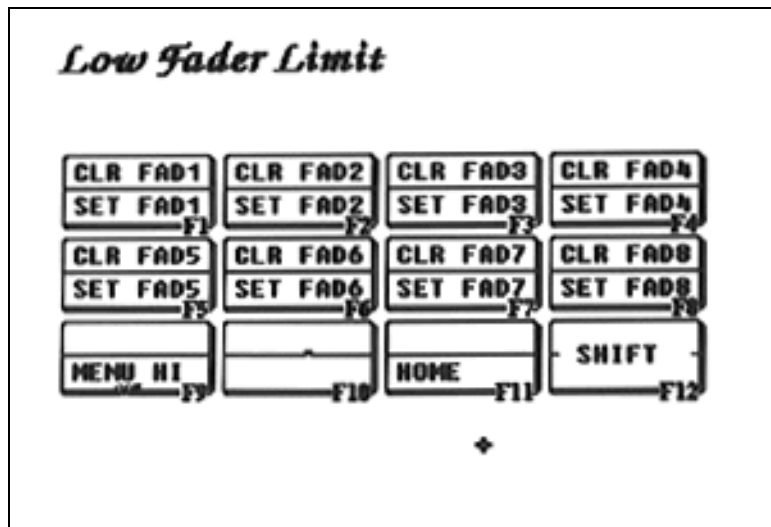
- Press and hold *F9* (shift) while pressing *F1-F8*, corresponding to faders 1 thru 8.
- Use the mouse to move the cursor to the appropriate "Clr Fad x" cell, where "x" is the corresponding fader number. Left-click once.

Shortcut to the High Fader Limit Menu

To quickly jump to the High Fader Limit menu, do either of the following:

- Press *F9*.
- Use the mouse to move the cursor to the cell labeled "Menu Hi." Left-click once.

The High Fader Limit Menu



Fader Limits provide an accurate, repeatable method of electrically limiting fader travel. Replacing grease pencil marks, masking tape, and thumbs, the **Fader Limits** feature provides a modern solution for those times when it is desirable to limit fader travel in a live mix.

The **High Fader Limit Menu** is used set an electrical high limit for each hardware fader.

Setting a High Fader Limit

To set a high fader limit, first move a fader to a desired maximum level that you don't wish to exceed. Then do either of the following:

- Press a sofkey *F1-F8*, corresponding to faders 1 thru 8.
- Use the mouse to move the cursor to the appropriate "Set Fad x" cell, where "x" is the corresponding fader number. Left-click once.

Note: When a High Limit is set, the corresponding fader's "HLIM" legend illuminates.

Clearing a High Fader Limit

To clear a high Fader Limit, do either of the following:

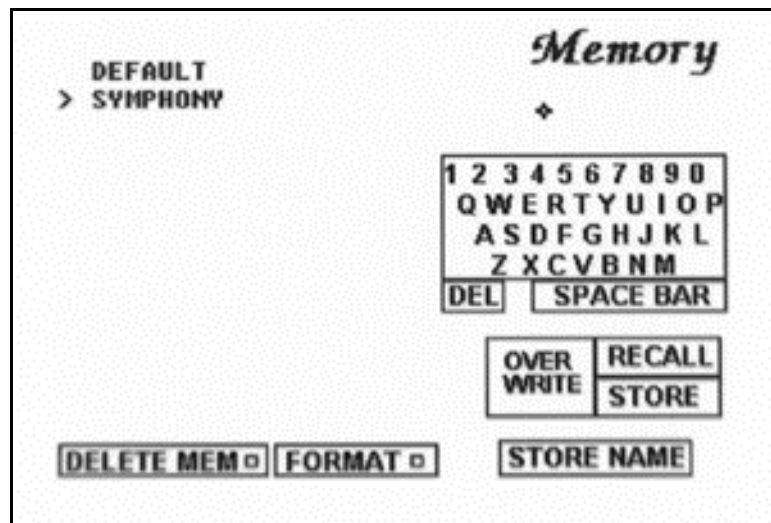
- Press and hold *F9* (shift) while pressing *F1-F8*, corresponding to faders 1 thru 8.
- Use the mouse to move the cursor to the appropriate "Clr Fad x" cell, where "x" is the corresponding fader number. Left-click once.

Shortcut to the Low Fader Limit Menu

To quickly jump to the Low Fader Limit menu, do either of the following:

- Press *F9*.
- Use the mouse to move the cursor to the cell labeled "Menu Lo." Left-click once.

The Memory Menu



The **Memory Menu** is used to store and recall operational snapshots of mixer settings.

Note: The Memory menu does not store or recall Setup data.

The Cameo retains all settings in battery-backed RAM, ready for instant recall.

Saving a mixer configuration to memory

1. Using the mouse to spell-out a filename, left-click on the appropriate on-screen characters. If you make a mistake, click on **DEL**.
2. Left-click on **STORE**. The file is added to the resource list on the left side of the menu.

Note: If step 1 is omitted, a file with no filename will be created. The result is a gap in the resource list. To add a filename after-the-fact, use the Rename procedure, detailed on the next page.

Recalling a mixer configuration from memory

1. Use the mouse to position the cursor over the filename you wish to recall. Left-click to reposition the pointer to that file.
2. Left-click on **Recall**.

Note: Recalling a snapshot does not alter the previous Fader assignments.

Overwriting the contents of a memory

1. Use the mouse to position the cursor over the filename you wish to overwrite. Left-click to reposition the pointer to that file.
2. Left-click on **Overwrite**.

Renaming a memory

1. Use the mouse to position the cursor over the filename you wish to rename. Left-click to reposition the pointer to that file.
2. Using the mouse to spell-out a filename, left-click on the appropriate on-screen characters. If you make a mistake or need to erase a previous filename, click on **DEL**.
3. Left-click on **Store Name**.

Deleting a memory

1. Use the mouse to position the cursor over the filename you wish to delete. Left-click to reposition the pointer to that file.
2. Use the mouse to precisely position the cursor over the small square on the right of the **Delete Mem** cell.
3. Left-click to delete the memory.

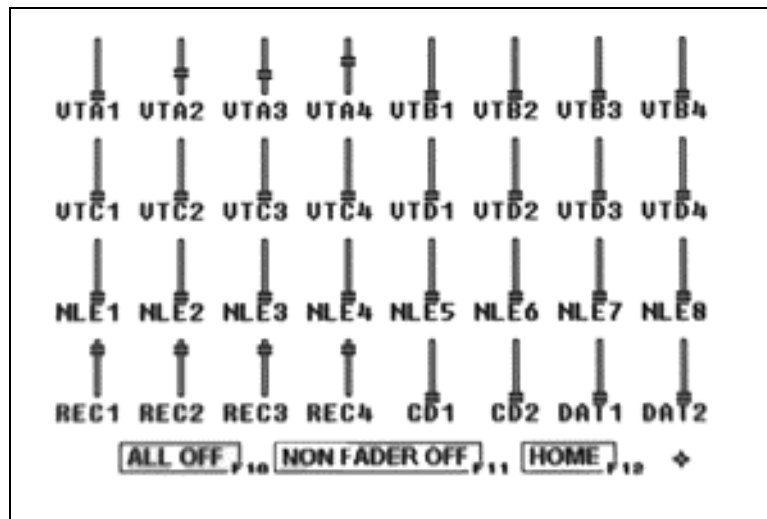
Note: There is no "undo" for this function.

Deleting all memories.

1. Use the mouse to precisely position the cursor over the small square on the right of the **Format** cell.
2. Left-click to delete all files.

Note: There is no "undo" for this function.

The Assign Menu



The **Assign Menu** is primarily used to give the user a graphical representation of the relative electrical fader level of all 32 Cameo sources.

Since sources that are not on hardware faders may still contribute to a mix, this menu is invaluable for determining active audio sources. Note that this display updates in real time as fader levels are adjusted.

The menu also provides shortcuts for manipulating the levels of faders that are not assigned to faders. As with all Cameo menus, the user may opt to use the mouse or the corresponding softkeys to select the following features:

(F10) All Off

Sets the electrical fader level of all 32 sources to infinity (off), regardless of the mechanical position of the hardware faders.

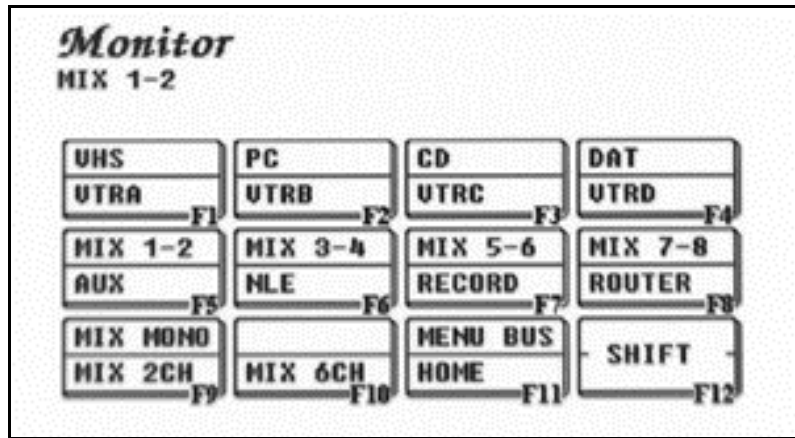
(F11) Non Fader Off

Sets the electrical fader level of all sources **not** assigned to faders to infinity (off). Use of this feature saves the step of assigning multiple sources back to faders in order to turn them off, and ensures that only the sources that are assigned to faders are contributing to the mix.

(F12) Home

Selects the **Home Menu**.

The Monitor Select Menu



The **Monitor Select** menu is used to select the audio source that is to be heard on the edit suite's speaker system. The currently-selected source is displayed just below the Menu heading in the top left corner of the menu.

Left-clicking on a selection or pressing the corresponding softkey assigns that source to the Monitor Busses, as specified in the **Bus Assign Menu**.

Note that each cell is divided in half. To select the upper source, press and hold **F12** while selecting the source's corresponding softkey. Alternatively, use the mouse to point the cursor at the desired source and left-click.

As with all Cameo menus, selections may be made with either the associated softkeys, or with the mouse, using a left-click. When using the softkeys, press and hold **F12** to select the sources in the upper region of each cell.

(F1) VTRA

Assigns VTRA to the Monitor Busses.

(F2) VTRB

Assigns VTRB to the Monitor Busses.

(F3) VTRC

Assigns VTRC to the Monitor Busses.

(F4) VTRD

Assigns VTRD to the Monitor Busses.

(F5) AUX

Assigns the AUX source to the Monitor Busses.

(F6) NLE

Assigns the output of the Non Linear Editing system to the Monitor Busses.

(F7) Record

Assigns the Record device to the Monitor Busses.

(F8) Router

Assigns the output of a facility Router to the Monitor Busses.

(F9) Mix 2CH

Performs a mix-down of all mix busses to only Monitor Busses 1 and 2. Mix Busses 1,3, and 5 are automatically summed to Monitor Bus 1, while Mix Busses 2,4, and 6 are automatically summed to Monitor Bus 2.

(F10) Mix 6CH

Selects discrete 6-channel monitoring for surround sound applications.

(F11) Home

Selects the **Home Menu**.

(F12) Shift

Press and hold this key to access the shifted sources and functions, detailed below.

(Shift +F1) VHS

Assigns a VHS deck to the Monitor Busses.

(Shift +F2) PC

Assigns the output of a PC to the Monitor Busses.

(Shift +F3) CD

Assigns the CD player to the Monitor Busses.

(Shift +F4) DAT

Assigns a DAT recorder to the Monitor Busses.

(Shift +F5) Mix 1-2

Selects only Mix Bus 1 and 2 for monitoring.

(Shift +F6) Mix 3-4

Selects only Mix Bus 3 and 4 for monitoring.

(Shift +F7) Mix 5-6

Selects only Mix Bus 5 and 6 for monitoring.

(Shift +F8) Mix 7-8

Selects only Mix Bus 7 and 8 for monitoring.

(Shift +F9) Mix Mono

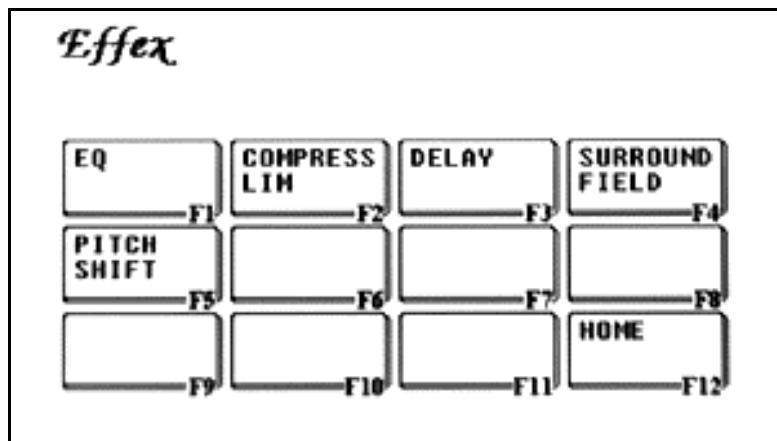
Sums all mix busses to all monitor busses.

(Shift +F10)**(Shift +F11) Menu Bus**

Opens the **Bus Assign** menu, where sources are assigned to **Mix** and **Monitor** busses.

(Refer to the section on the Bus Assign menu for details about this feature)

The EFX Submenu



The **EFX Submenu** is used to select Cameo's extensive audio effects processors, as well as the Surround Field panning display.

(F1) EQ

Opens the **EQ** menu.

(F2) Compress Lim

Opens the **Compressor/Limiter** menu.

(F3) Delay

Opens the **Delay** menu.

(F4) Surround Field

Opens the **Surround Field VU** display.

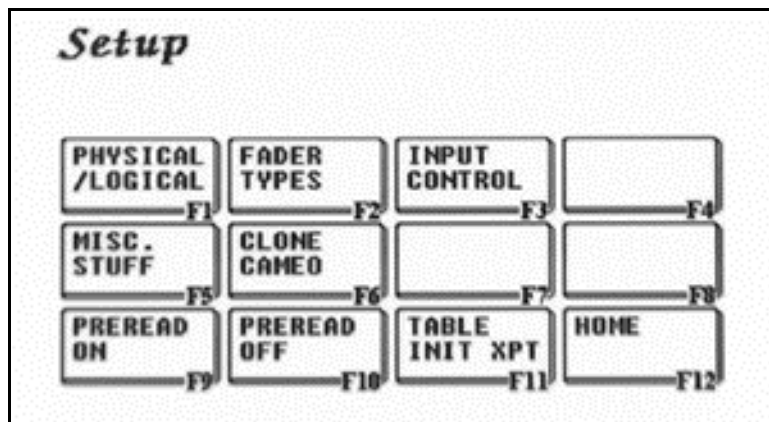
(F5) Pitch Shift

This feature is not currently supported.

(F12) Home

Selects the **Home Menu**.

The Setup Menu



The **Setup Submenu** is used to access Cameo's setup menus, and also contains a few features peculiar to linear editing systems.

(F1) Physical/Logical

Opens the **Physical/Logical Assignment Menu**, where logical devices (VTRA, VTRB, etc.) are matched with physical sources (Input 1, Input 2, etc.)

(F2) Fader Types

This feature is not currently supported.

(F3) Input Control

Opens the **Input Control Menu**, where input-related settings for gain, sample-rate conversion, and reference are made.

(F4)

No Function

(F5) Misc. Stuff

Used to debug MIDI communications.

(F6) Clone Cameo

Selecting this feature uploads all Setup data to either a connected PC or another Cameo via the RS232 port.

(F7)

No Function

(F8)

No Function

(F9) Preread On

Selecting this feature automatically sets the Record VTR's faders to Unity and assigns the Mix busses as follows:

Record VTR Channel 1 → Mix Bus 1

Record VTR Channel 2 → Mix Bus 2

Record VTR Channel 3 → Mix Bus 3

Record VTR Channel 4 → Mix Bus 4

(F10) Preread Off

Deassigns the Record VTR's Mix Bus assignments.

(F11) Table Crosspoint Init

Initializes the Cameo's crosspoint table as follows:

Silence = Crosspoint 0

VTRA = Crosspoint 1

VTRB = Crosspoint 2

VTRC = Crosspoint 3

VTRD = Crosspoint 4

VHS = Crosspoint 5

PC = Crosspoint 6

RTR = Crosspoint 7

NLE = Crosspoint 8

AUX = Crosspoint 9

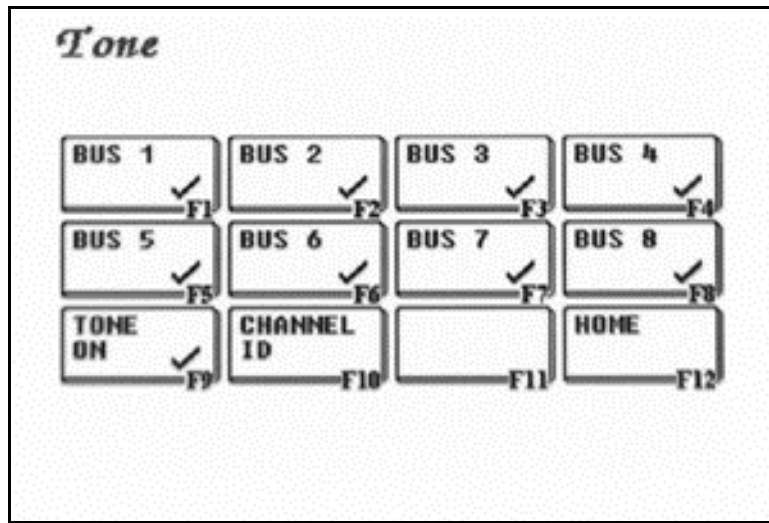
RVTR = Crosspoint 10

Note: This feature is only applicable to linear editing systems.

(F12) Home

Selects the **Home Menu**.

The Tone Menu

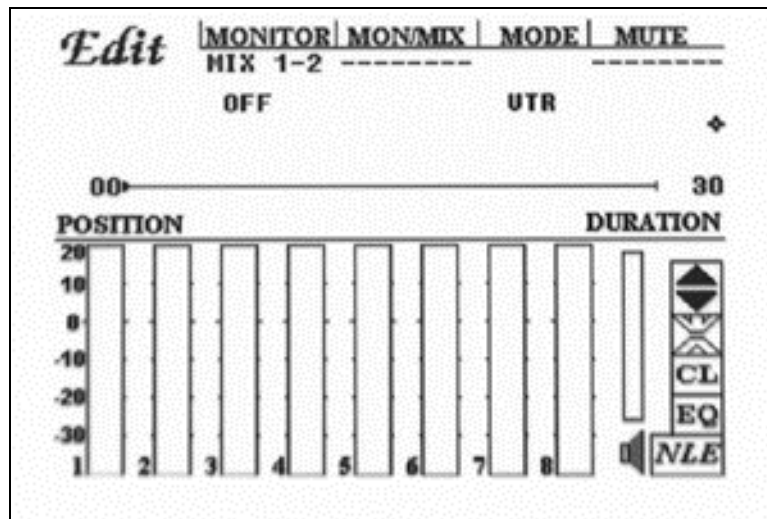


The Tone Menu is used to assign the internally-generated 1000 Hz tone to any combination of Mix Buses. A check-mark in a menu cell indicates that the corresponding Mix Bus is enabled for Tone. Left-clicking in a cell or pressing the corresponding softkey sets or removes the check-mark.

The tone generator is turned-on by the presence of a check-mark in *F9*. Conversely, tone is disabled by removing the check-mark from *F9*. The check-marks in *F1-F8* need not be altered when all that the user needs to do is turn the tone generator on and off.

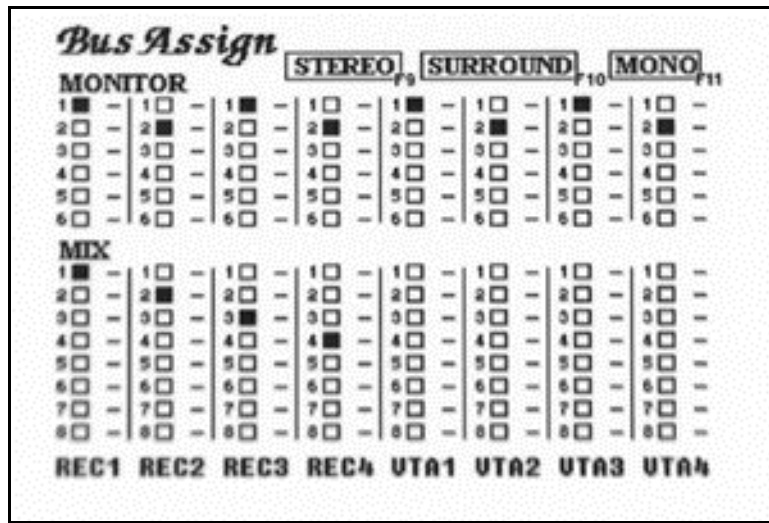
Channel ID (*F10*) is an optional feature that momentarily drops the signal to each channel in a consecutive fashion. By monitoring the inputs to downstream systems, Channel ID becomes a useful tool to verify the integrity of the audio wiring. Channel ID should also, ideally, be recorded on the master tape, to be used as a tool by technicians at a duplication or uplink facility.

The Edit Menu



This menu is only utilized in linear editing environments where Cameo is under ESAM control. Besides displaying the current duration and position of the mixer's timeline, the menu also contains two set-up related items that customize the editor interface.

The Bus Assign Menu



By far, the most simple way to assign sources to Mix busses is via the **Bus Assign** keys above each Fader. The **Bus Assign Menu** provides an alternate mouse-driven means of performing that operation, as well as adding independent Monitor Bus selection for each Cameo logical source.

Note: Only sources that are assigned to hardware faders may have their Bus Assignments modified.

Use the mouse to position the cursor over the desired Mix or Monitor Bus channel, and left-click to either enable or disable the selection. Legends along the bottom of the display mirror the current hardware fader assignments.

Note: Mix and Monitor Bus assignments are totally independent.

This menu also provides some monitoring shortcuts, detailed below:

(F9) Stereo

Selects the **Mix 2CH** mode.

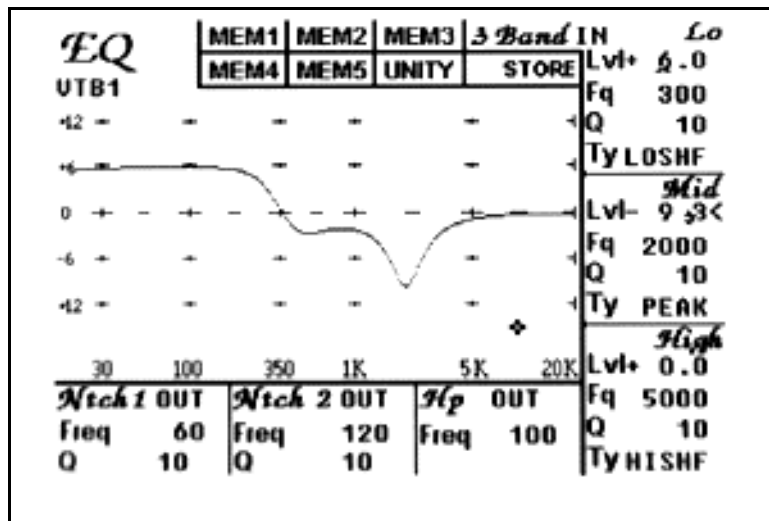
(F10) Surround

Selects the **Mix 6CH** mode.

(F11) Mono

Selects the **Mono Mix** mode.

The EQ Menu



The **EQ** menu provides comprehensive channel-by-channel adjustment of **Equalization**. Three bands of user-defined EQ types provide enough tools to adequately "fix" just about any source. As EQ is adjusted, the EQ graph displays the current curve of all 3 bands simultaneously, as well as the effect of the two Notch and single High Pass Filters.

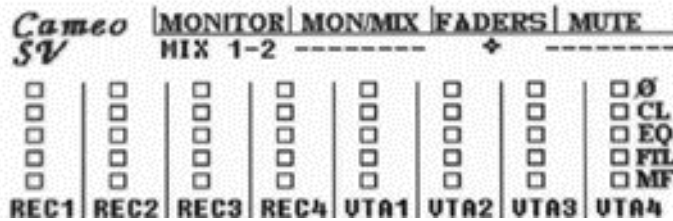
Note: Up to 16 channels may be equalized simultaneously.

EQ Types

<u>Name</u>	<u>Function</u>
High Pass	A filter that attenuates low frequencies, while passing those above a specified frequency.
Notch	A filter capable of attenuating an extremely narrow band of frequencies.
Peak	A filter that supplies a peak amount of boost or attenuation at the turnover frequency, and to a lesser degree at the frequencies above and below the turnover frequency.
Lo Shelf	A filter that supplies a constant amount of boost or attenuation at all frequencies beyond the equalizer's turnover frequency.
Hi Shelf	A filter that supplies a constant amount of boost or attenuation at all frequencies beyond the equalizer's turnover frequency.

Selecting a source to Equalize

1. Access the **Home Menu** by right-clicking once.



2. Use the mouse to position the cursor over the desired source name, located just above the VU meters. (The VU meters are omitted from the graphic, above)
3. Left-click to select the source.
4. Use the mouse to position the cursor over the corresponding EQ on/off box in the matrix above the selected source name. Left-click to highlight the box, which enables EQ for that channel.
5. Use the mouse to position the cursor over the EQ cell in the lower right corner of the menu. Left-click to open the **EQ** menu. The desired source name should now be displayed in the top left corner of the menu, just below the *EQ* designation.

Note: The EQ on/off box must be highlighted in order for Equalization adjustments to have any affect over the audio signal or the graphical display in the EQ menu.

Using the 3-Band Equalizer

Adjustments for the 3 Band EQ are located along the right side of the EQ display, and are divided into Low, Mid, and High Bands. In essence, however, the range of all three Bands is identical, as follows:

- Attenuation/Boost (LVL): -14.9 to +15.0 dB
- Turnover Frequency (Fq): 23 to 18,000 Hz
- Bandwidth (Q): 5 to 30
- EQ Types (Ty): High Shelf, Low Shelf, Peaking

Adjusting the 3 Band Equalizer

1. If the heading for the 3 Band EQ section of the menu says "3 Band Out," use the mouse to position the cursor over those words and left-click to enable the 3 Band EQ.
2. Use the mouse to position the cursor on the desired adjustment parameter.
3. Left-click to move the pointer to the desired parameter.
4. Rotate the softknob on the Cameo control panel to adjust the value.

Adjusting the Notch Filters

1. If the heading for the desired Notch filter section of the menu says "Ntch(x) Out," use the mouse to position the cursor over those words and left-click to enable the filter.
2. Use the mouse to position the cursor on the desired adjustment parameter.
3. Left-click to move the pointer to the desired parameter.
4. Rotate the softknob on the Cameo control panel to adjust the value.

Adjusting the High Pass Filter

1. If the heading for the High Pass filter section of the menu says "Hp Out," use the mouse to position the cursor over those words and left-click to enable the filter.
2. Use the mouse to position the cursor on the desired adjustment parameter.
3. Left-click to move the pointer to the desired parameter.
4. Rotate the softknob on the Cameo control panel to adjust the value.

Resetting all EQ Paramters to Unity

1. Use the mouse to position the cursor on the cell labeled "Unity" near the top of the display.
2. Left-click to reset all EQ parameters to unity.

Note: There is no "undo" for this function.

Saving EQ settings in memory

Cameo provides 5 memory registers to store EQ settings. To store a setting:

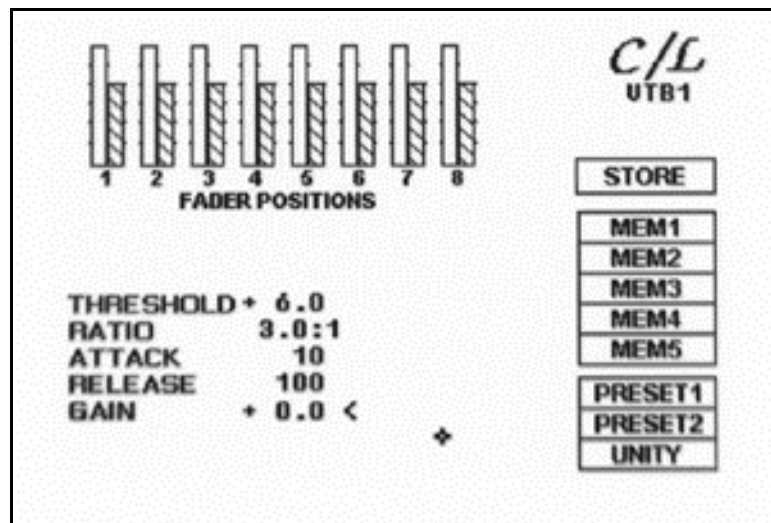
1. Use the mouse to position the cursor on the cell labeled "Store" near the top of the display.
2. Left-click. An asterisk (*) is added to the cell, indicating that the system is ready to store your settings to a memory register.
3. Left-click on a desired memory register (1-5) to store the settings.

Note: There is no overwrite protection for the five registers!

Copying EQ settings from one channel to another

1. Store the settings you wish to copy to an EQ memory register, as outlined above.
2. Right-click to return to the **Home Menu**.
3. Left-click on the designation for the target channel. If that channel is not currently assigned to a fader, perform an assignment routine at this time.
4. Use the mouse to position the cursor over the corresponding EQ on/off box in the matrix above the selected target source name. Left-click to highlight the box, which enables EQ for that channel.
5. Use the mouse to position the cursor over the EQ cell in the lower right corner of the menu. Left-click to open the **EQ** menu. The desired source name should now be displayed in the top left corner of the menu, just below the *EQ* designation.
6. Use the mouse to position the cursor over the previously-stored memory register.
7. Left-click to recall the settings.

The Compressor/Limiter Menu



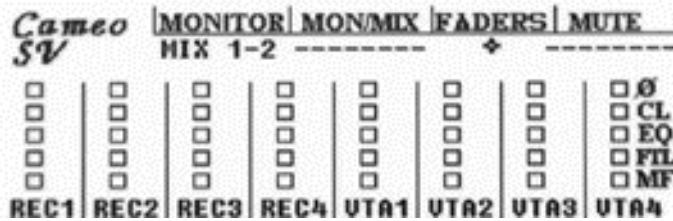
The **Compressor/Limiter Menu** is used to adjust the settings of Cameo's compressor/limiter.

Compressor/Limiter adjustment parameters

<u>Name</u>	<u>Function</u>
Threshold	Adjusts the Threshold (level) at which compression will be active (similar in function to the Clip control on a video keyer).
Ratio	Adjusts the ratio between the input and output of the compressor/limiter. Higher values result in greater compression.
Attack	Adjusts how quickly the compressor/limiter reacts once the input has reached or exceeded the Threshold .
Release	Adjusts how quickly the compressor/limiter returns to normal once the input level falls below the Threshold .
Gain	Adjusts the compressor/limiter input level.

Selecting a source to Compress

1. Access the **Home Menu** by right-clicking once.



2. Use the mouse to position the cursor over the desired source name, located just above the VU meters. If the desired channel is not currently assigned to a fader, perform an assignment routine at this time. Left-click to select the source.
3. Use the mouse to position the cursor over the corresponding **CL** on/off box in the matrix above the selected source name. Left-click to highlight the box, which enables the compressor/limiter for that channel.
4. Use the mouse to position the cursor over the **CL** cell in the lower right corner of the menu. Left-click to open the **Compressor/Limiter Menu**. The desired source name should now be displayed in the top right corner of the menu, just below the *C/L* designation.

Note: The CL on/off box must be highlighted in order for C/L adjustments to have any affect over the audio signal.

Adjusting the Compressor/Limiter parameters

1. Use the mouse to position the cursor on the desired adjustment parameter.
2. Left-click to move the pointer to the desired parameter.
3. Rotate the softknob on the Cameo control panel to adjust the value.

Note: As you make adjustments to the compressor, the display at the top of the menu shows the fader level and degree of gain reduction on the source.

Resetting all Compressor Parameters to Unity

1. Use the mouse to position the cursor on the cell labeled "Unity" near the top of the display.
2. Left-click to reset all C/L parameters to unity.

Note: There is no "undo" for this function.

Saving C/L settings in memory

Cameo provides 5 memory registers to store C/L settings. To store a setting:

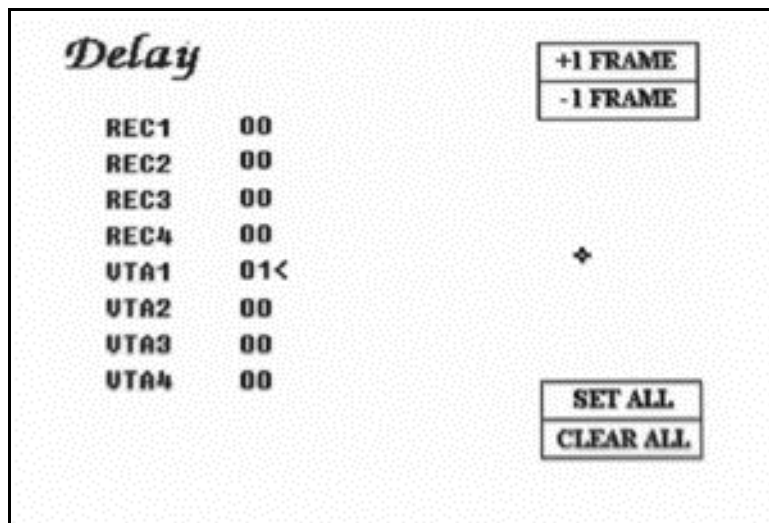
1. Use the mouse to position the cursor on the cell labeled "Store" on the right side of the display.
2. Left-click. An asterisk (*) is added to the cell, indicating that the system is ready to store your settings to a memory register.
3. Left-click on a desired memory register (1-5) to store the settings.

Note: There is no overwrite protection for the five registers!

Copying C/L settings from one channel to another

1. Store the settings you wish to copy to a C/L memory register, as outlined above.
2. Right-click to return to the **Home Menu**.
3. Left-click on the designation for the target channel. If that channel is not currently assigned to a fader, perform an assignment routine at this time.
4. Use the mouse to position the cursor over the corresponding **CL** on/off box in the matrix above the selected target source name. Left-click to highlight the box, which enables the compressor/limiter for that channel.
5. Use the mouse to position the cursor over the **CL** cell in the lower right corner of the menu. Left-click to open the **C/L** menu. The desired source name should now be displayed in the top right corner of the menu, just below the **C/L** designation.
6. Use the mouse to position the cursor over the previously-stored memory register.
7. Left-click to recall the settings.

The Delay Menu



The **Delay Menu** is used to assign/deassign a 1 frame delay for each Cameo source.

Note: Only sources currently assigned to hardware faders are eligible for changes to delay status.

Assigning a delay value to a source

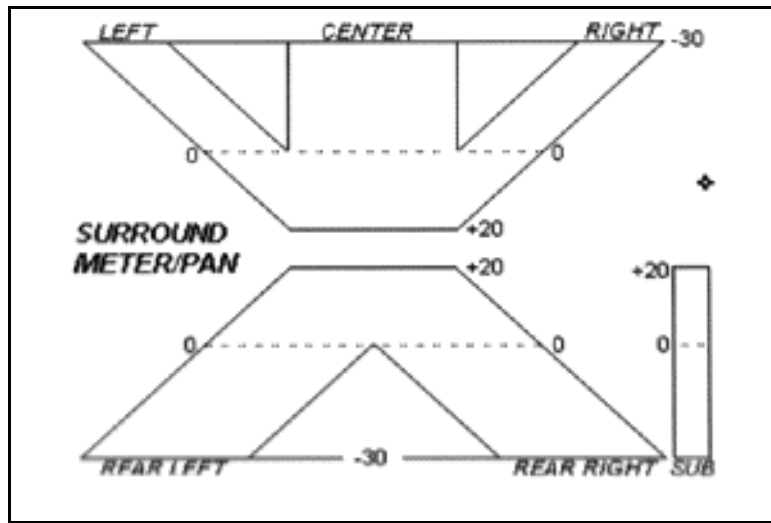
1. Use the mouse to position the cursor over the corresponding source name (note that the source names mirror the channel labels on the mixer control panel). Left-click to position the pointer on the source.
2. Rotate the softknob on the Cameo control panel or left-click on the "+1 Frame" or "-1 Frame" cells to adjust.
3. If you wish to set all sources identically, left-click on "Set All."

Clearing all delay values

1. Use the mouse to position the cursor over "Clear All."
2. Left-click to set all channels to zero delay.

Note: Only channels that are assigned to hardware faders will be affected.

The Surround Field Menu



The Surround Field Menu provides a graphical display of how sound should be reaching the listener in a surround-sound monitoring configuration. This menu is used to augment the **Home Menu's** VU meters.