

SAC 2K/2.2 Manual for Logic Audio Platinum

SAC-2.2 Software Assigned Controller



Kick	Snare	HiHat	LTom
Pan:-C-	Pan:+33	Pan:-44	Pan:-C-

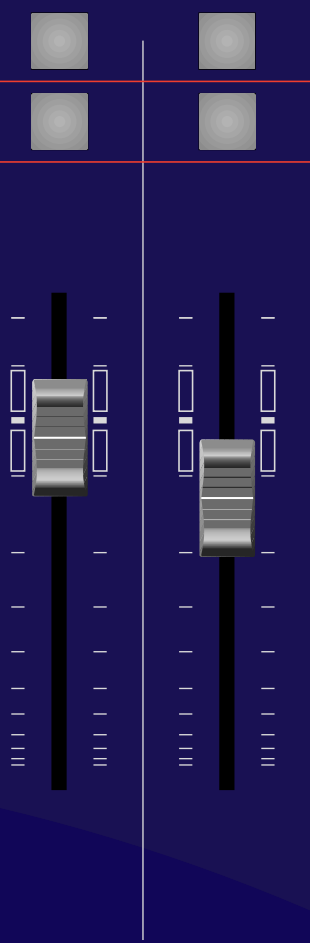
Bass	Guit1
Pan:-C-	Pan:+33 P

The interface displays six channel strips for Kick, Snare, HiHat, LTom, Bass, and Guit1. Each strip includes a fader and a solo button. The central Mixer-Mode panel offers various routing and processing options. The top status bar shows pan values for each track.

SAC-2K/SAC-2.2 in LGC (Logic Control) operating mode

Guit2 LdGuit
an:-44 Pan: -C-

TRACK 00.00.00.00.01
o zoom Name/Value



Global View

Software Navigation

Replace	Click	SMPTE/ Beat	Solo	Option	
F1	F2	F3	F4	Option	SAC-Option
F5 Save	F6 Undo	F7 Cancel	F8 Enter	Alt Alt	Control Control

Locator

6dB
0dB
-∞

Marker

Nudge Drop

Scrub Cycle

SHIFT

Pause

Rec

Dump

System

Automation

Read/Off
Trim

Touch
Group

Latch

Write

Instrument

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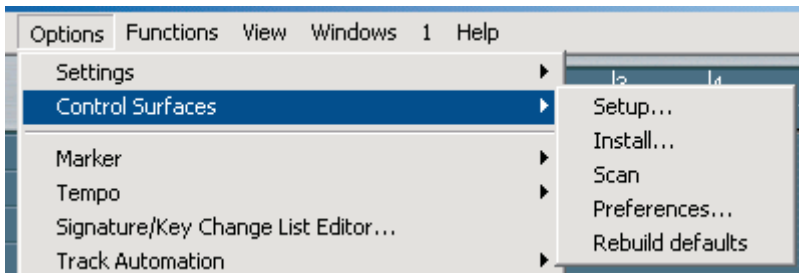
Attention!!

If a Logic Audio presents you with a dialog box when it recognizes the SAC-2K/2.2, suggesting you update the firmware, press [Cancel].

Installation and Setup

The basic assumption of this manual concerning using the SAC-2K/2.2 in Logic Control mode is that you have already connected, set up and installed the SAC-2K or SAC 2.2. You can use either the MIDI or the USB connection, the functionality is the same. Once the SAC is connected to your system, Logic Audio Platinum (version 5.1 or better) will “recognize” the SAC automatically as a Logic Control and activate the SAC’s LGC operation mode. When you start up Logic Audio it scans all active MIDI Ports for hardware controllers. This Scan Function sends a brief Sysex message, the Logic Control responds to if connected. Once the SAC receives this Sysex message, it automatically switches to Logic Control Mode and waits for your input.

To verify the installation or to edit the configuration parameters proceed as follows:
Select “Options” > “Control Surfaces” > “Setup...”



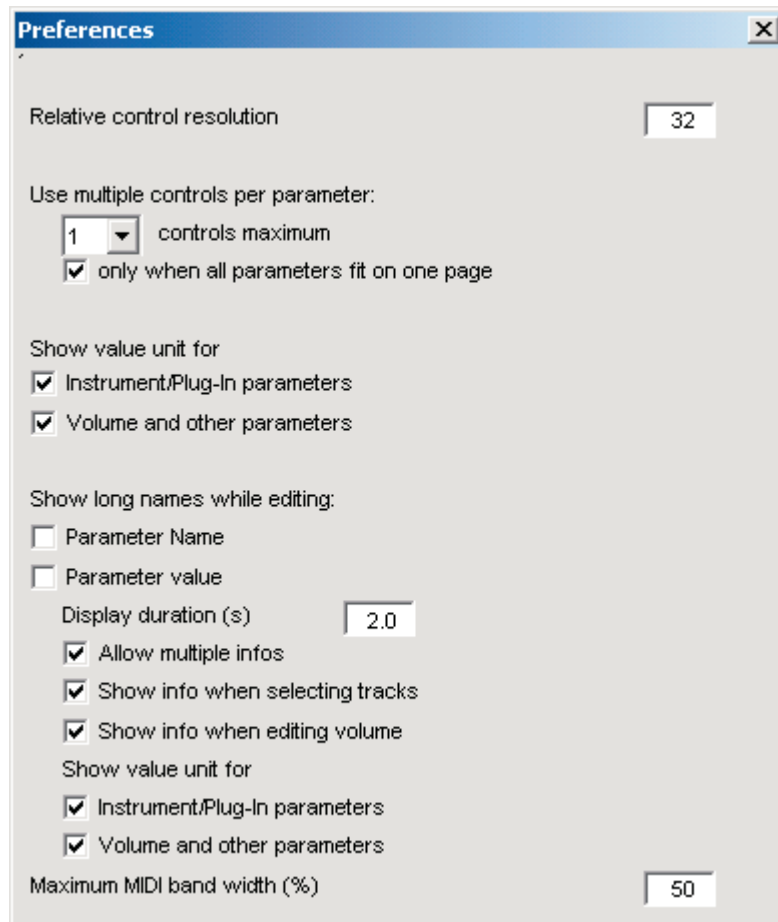
This will open up the Logic Control setup window. If you don't see an icon of the Logic Control in this window, Logic for some reason has not recognized the SAC. In this case, check your connections between SAC and computer once more, switch the LGC mode manually in the system menu of the SAC and restart Logic. By now you should definitely see the following display in the setup window:



Click on the Logic Control icon. On the left side of the setup window you should now see the parameters of the selected control surface.

In the section “Special Parameters” you should definitely deactivate the option “Touchless movable faders”. Use of this function with equipment with reliable touch sensitivity technology is not advisable, because in this mode fader movement is also used to recognize activation of the fader. Such “intelligence” cannot distinguish accurately between movement generated by manual movement of the fader and motor movement. This can result in this function becoming the source of potential problems during the recording of automation data.

The other selection options, which appear further down on the parameter list, are not relevant for the general functionality of the SAC and we will skip further detailed explanations at this time. More important are the settings in the dialog box “Preferences...” (“Options” > “Control Surfaces” > “Preferences...”), which we will pay attention to next.



Relative control resolution

Logic’s default value for this parameter is 128. This means that an encoder will have a resolution of 128 steps per rotation, in order for the complete value range to be covered in a full 360 degree revolution. This isn’t the case with the Logic Control or with the SAC. Adjust this parameter to a considerably lower value, so you can cover bigger range of values with one encoder revolution. A lower value means that the intervals between the edited parameter’s value become coarser. However, you can still make fine parameter adjustments, by pressing the [Alt] Button while rotating the encoder. The encoders of the SAC have 24 values per rotation. You should set this parameter to a value between 24 and 48, to enable you to cover wide value ranges easily.

Use multiple controls per parameter

Set this option to a value of 1. Due to the SAC’s layout there is no benefit when this option is activated.

Show long names while editing:

Disable both the “Parameter Name” and “Parameter value” options. Because the sizes of the displays differ between the Logic Control and the SAC, names and values can be displayed incorrectly if elongated information is used. The SAC can display considerably more characters and its control elements are located further apart. The SAC is programmed to

display blank spaces for a correct replication of Track Names between the individual channels. If these options are checked it is possible that long parameter names can be separated in pieces.

Display duration (s)

This parameter determines how long the alternate longer version of the parameter name is shown in the display, after releasing the relevant encoder. If the long parameter names preference is switched off, this parameter has no function.

Allow multiple infos

Show info when selecting tracks

Show info when editing volume

Show value unit for Instrument/Plug-in parameters

Volume and other parameters

The above mentioned parameters can be adjusted to your personal preference. Displaying units usually results in the expense of length of other info, i.e. parameter name or track name

Maximum MIDI bandwidth (%).

With this parameter you are able to increase or decrease data throughput. If you notice performance fluctuations during work with the SAC you can decrease the value. We never encountered such problems with our test systems. Of course decreasing this parameter also causes a decrease in automation accuracy. With the SAC, this parameter can only change the data throughput from Logic to the SAC. However, it is also possible to change the data throughput in the SAC's System menu. You will find more details in the SAC 2.2 manual under System menu settings.

Button assignement in Logic Control mode

In Logic Control mode, the SAC's button assignment does not conform with the labeling information printed on the surface. You will find a graphic of the actual button assignments on pages 2 and 3 of this manual. (you can print the two pages for reference)

You can find the button assignment used in the following charts. We are currently producing special templates, which will allow comfortable working with these button assignments, similar to earlier templates we produced for Digital Performer and Pro Tools. We will be happy to send you these templates free of charge upon request. For the time being, you can also write on the backs of the included templates, for temporary ease of operation.

Jog Wheel Buttons

This group of buttons is set up in a circle around the Jog Wheel. In the left column of the charts you can see the original function inscription of the SAC and in the right column the according function corresponding to Logic Audio.

Jog-Wheel Tasten	
SAC-Taste	LC-Funktion
Shift	Shift
Scrub	Scrub
From	Nudge
Store Marker	Marker
To	Drop
Recall Marker	Cycle

Transport Field

The assignment of the transport buttons is as labeled on the SAC.

SAC Mixer Mode Buttons

Located Between the two fader groups of the SAC are the Mixer Mode buttons. In the following chart you can see the LGC assignments.

SAC Mixer Mode Buttons		
Assignment	Track	Send
	Pan/Surround	Plugin
	EQ	Instrument
Global View	MIDI-Tracks	Inputs
	Audio-Tracks	Instrument
	Aux	Busses
	Output	User
Fader	n/a	Flip-Mode
Track-Group switches	<	>
	<<	>>

The Software Navigation Buttons

Just above the Locator Display of the SAC are the Software Navigation buttons. The [Num] key of the SAC is of particular importance. It is used for toggling the assignments of the remaining SAC Software Navigation buttons. We will use the name SAC Option for this button in the following chapters. When the [SAC Option] button is pushed it lights up and the third display momentarily shows the current status of the four functions which are assigned to the upper first four buttons. You will find the assignments of the Software Navigation buttons in the following two charts.

SAC Software Navigation I - SAC Option Button [NUM] not activated (LED off)					
F1	F2	F3	F4	Option	SAC-Option
F5	F6	F7	F8	Alt	Control

SAC Software Navigation II - SAC Option Button [NUM] activated (LED on)					
Replace	Click	SMPTE/-BEAT	SOLO	Option	SAC-Option
Save	Undo	Cancel	Enter	Alt	Control

The Master Select Button

The [Master Select] button above the master fader has been assigned the [Global view] button function of the Logic Control.

Master-Select Button	
SAC Button	LC Mode Function
Master Select	Global View Button

The Channel Strip Buttons

The Channel Strip buttons of the SAC are used to activate the various automation modes of Logic Audio. The one exception is the [Instrument] Channel Strip button. The Instrument button allows you to call up the integrated synth editors of the SAC, just like in other SAC modes. When in LGC mode, double-click the [Instrument] button to call up the Instrument editor section.

SAC Channel StripButtons		
original SAC Button	SAC Button function in Logic Control Mode, if the [NUM] Button is NOT lit.	SAC Button function in Logic Control Mode, if the [NUM] Button is lit.
EQ's	Read/Off	Trim
Inserts/Sends	Touch	Group
Dynamics	Latch	n/a
MIDI	Write	n/a
Instrument	SAC Instrument Editor	SAC Instrument Editor

The Mute and Select Buttons

The Logic Control has 4 buttons per fader channel. They are assigned the functions Solo, Mute, Select and Record-Ready. Since the SAC has only two buttons per fader channel, the [Solo/Mute] switch of the SAC is used for the toggling of two alternate assignments of these buttons.

The Mute/Solo button toggles between two functions for each of the channels Mute and Select buttons		
	SAC Buttons	LC Function
Mute/Solo Button not activated, LED off	Mute-Buttons	Mute
	Select-Buttons	Select
Mute/Solo Button activated, LED on	Mute-Buttons	Solo
	Select-Buttons	Record-Enable

The View Modes of the SAC

In the following section you will find a detailed description of all functions of the Logic Control implementation. It is safe to assume that the implementation by Emagic might receive changes or improvements. You will be able to find instructions and additions in the readme files of future Logic Audio Platinum updates. This manual was written based on the possibilities of version 5.12 of Logic Audio Platinum.

First contact – the status of the SAC after loading the Logic Audio 5.1 Autoload Song.

You should always turn on the SAC first, then start up Logic Audio, in case you have not stored LGC mode as start-up mode in your SAC-2.2. If you don't, you will have to activate the LGC mode manually in the System menu of the SAC, as Logic only searches for potential control surfaces during the start-up process. If you select the LGC mode in the SAC, Logic will react to the messages which the SAC sends to Logic in this mode to alert the program of its presence.

After loading the Autoload song, all encoder settings, fader positions and display messages are updated. The Encoders set the panorama of the selected tracks, the faders control their volumes and the [mute] and [select] buttons are active.

Note

Instructions for storing the startup operation mode can be found in your SAC manual. The Start-up mode can only be stored with the SAC 2.2 model. Users of the SAC-2K can store their setting via MIDI dump to a computer. See more about this in the SAC-2.2 Manual.

View Modes

Track Arrangements in the displays of the SAC can be done in three different display modes:

1) Track View

The arrangement is in accordance with the Arrange window. If more than one track affects the same environment object, only one channel is set up per object.

2) Global View

The arrangement is in accordance with the track Mixer.

3) Extended Track View

The arrangement is in accordance with the Arrange window. Contrary to Track view, all tracks are shown – even if more

than one is assigned to the same environment object. The [Mastersselect] button is used for the selection of the various display modes.

Global-View Buttons		
Button	Modifier Button	Function
Global View	-	Toggles between "Track View" and "Global View"
	Shift	Toggles between "Track View" and "Extended Track View"

You can select a specific track category in global view directly, by pushing the according category button. The category button is located on the SAC in the middle section of the Mixer Mode button. When pushing a track category button the global View Mode is automatically selected. However, you can also use the buttons for quick track navigation in the track view or extended track view mode. The following chart shows all of the selection possibilities.

Track-Group Buttons		
Button	Modifier Button	Function
MIDI	-	Activates Global View and displays MIDI tracks
	Shift	Calls up first fader group (1-8).
Inputs	-	Activates Global View and displays Input tracks
	Shift	Calls up second fader group (9-16)
Audio Tracks	-	Activates Global View and displays Audio tracks
	Shift	Calls up third fader group (17-24)
Instruments	-	Activates Global View and displays Instrument tracks
	Shift	Calls up forth fader group (25-32)
Aux	-	Activates Global View and displays Aux tracks
	Shift	Calls up fifth fader group (33-40)
Busses	-	Activates Global View and displays Buss Object tracks
	Shift	Calls up sixth fader group (41-48).
Outputs	-	Activates Global View and displays Output tracks
	Shift	Calls up seventh fader group (49-56).
User	-	Keine Funktion!
	Shift	Calls up eighth fader group (57-64).

The lowest four of the Mixer Mode buttons are used for moving the display section of the mixer. Instead of directly selecting a specific fader group (as just described) you can move the selection of the currently displayed track upwards or downwards.

Bank-Select Buttons		
Button	Modifier Button	Function
< >	-	displayed Tracks shift one at a time
	Option	Jumps to the first or last Track position
<< >>	-	displayed Tracks shift in groups of 8 at a time
	Option	Jumps to the first or last Track position

In Track View or extended Track View the SAC always shows the tracks of a specific file. Normally they are located in the uppermost level, the root file. If you have combined multiple tracks to a file, you have to first jump into the lower file level, to be able to operate the channels within the sub-file. If you wish for a file to be shown in the display, all you have to do is push the assigned encoder button to reach the lower file level. Thereafter you are able to reach all tracks of the file with the help of the already introduced selection buttons. When you want to leave the file level, push the [cancel] button. The [cancel] button is in the Software Navigation area of the SAC with the [SAC=Option] button activated.

Assignment Buttons, „Channel Strip” display and „Multi Channel“ Display

Of course, setting the panorama of a track is not the only thing you can do with the encoders! You can edit any parameter of a track. Included are all parameters of integrated software synths and editing functions of Insert Plugins. Even VST Plugins can be edited using the encoders, as long as they are able to be edited from control surfaces. If the VST Plugins allow for control generally but can't send parameter strings to Logic, the displays of the SAC will only show the according MIDI control numbers. In this case you might want to contact the Plugin Manufacturer. The more people that express concern about incompatibilities and insufficient implementation, the more the Plugin designers will consider reworking their products.

Bei der Belegung der Encoder gibt es zwei verschiedene Betriebsarten beziehungsweise Anzeigearten:

1) Multi Channel display

In “Multi Channel” display mode, the selected parameter can be edited on up to eight channels simultaneously. This mode is in accordance with the functions of a traditional mixer. If you connect multiple SACs or expansion units to Logic, you will be able to edit more than eight channels at once.

To edit a parameter in Mutli Channel Mode, select one of the assignment buttons (the upper 6 buttons of the SAC Mixer Mode buttons are the equivalent of the assignment buttons). After selection, a parameter is assigned immediately to the encoders. Using the second encoder in the third display of the SAC you are now able to select another parameter for editing

Note:

Make sure that the Zoom Function is not active. This function can be turned on and off with the third encoder button under the third display. When the Zoom function is active, parameter selection is not possible.

The fourth encoder button switches between parameter and value display. This button determines whether you want to see the parameter values or the parameter names in the lower display row above the encoders. Displaying the parameter names will make selection of the desired parameters easier.

Parameters available for selection are shown blinking in the display. The selection won't take place until you have pushed the according encoder button.

Parameters which are not available for editing are not displayed in the SAC at all nor offered for selection. For instance, if you would like to change the position [Pre/Post] of a FX Send, this FX send has to be activated. A FX Send becomes active once it has been assigned to a Bus. Similarly you won't be able to select the frequency of an EQ, when there is no EQ active in the selected slot or none has been selected.

Logic Audio has multiple FX-Sends, Insert Slots and EQs. Using the first encoder under the third display you can select the FX Send, EQ or Insert Number. You can view the current selection in the third display above the encoder.

There is also another alternate mode of operation for the selection of specific parameters. This one is of particular interest to experienced Users. Select a non-lit assignment button and keep it depressed, a direct selection choice for the desired parameter of the according assignment group will be displayed in the first two displays. They jump to the "multi channel" display of the desired parameters when the assigned encoder button is used.

Now, as you work further with the SAC-2.2, you will undoubtedly encounter the "Channel Strip" display mode frequently, as the assignment buttons always will switch between these two display modes.

2) Channel Strip display

When selecting "Channel Strip" display mode, up to eight parameters of a selected channel can be edited simultaneously. It could be 8 EQ parameters, the parameters to a random plugin or the surround parameters of a track, for instance. You can reach the Channel Strip display mode by pushing an already selected assignment button a second time. To leave the channel strip, push the button again.

Additionally, the Channel Strip mode is called up automatically when you select an instrument or FX plugin with the encoder and confirm the selection by pressing the encoder. The according plugin window will be opened automatically in Logic Audio. You can change the track to be edited anytime with the [Select] button. If you have the arrange window set in the foreground (you can open, close and move into the foreground the arrange window by using the button combination [shift]+[Functionbutton F1], you can comfortably make a quick track selection with the first encoder under the third display.

If a "Channel Strip" display makes multiple parameter pages available, you can select the pages with the second encoder under the third display. The upper display row of the Channel Strip display will show you the current page number as well as the number of available display pages.

To leave the Channel Strip, push the according assignment button a second time. Any Plugin window that may have been opened by Logic before, will be automatically closed.

Encoders and Faders in LGC Mode

Callup of Preset Values

If you wish to reset a parameter quickly to a preset value, press the assigned encoder button. The value will be reset immediately to the preset value. With parameters which offer only two possible values, the encoder button will toggle between the two available values.

Editing in Fine Mode

By keeping the [Alt] button pushed during editing, you can make "fine" adjustments to the according parameters.

Calling up Maximum and Minimum Values

Holding the [Option] button pushed while editing a value with the encoder switches back and forth between the maximum and minimum value of the parameter.

Fader-Flip Mode

By now you know how you can edit parameters of your choice using the encoders. However it is also possible to change parameters with the faders of the SAC. For this operation, Logic Audio supports a Fader Flip Mode. By pushing the [Flip] button, you can adjust the parameters simultaneously with the faders. When selecting the Flip function the faders are automatically set to the parameter values.

By pushing down the [shift] button while pushing the [flip] button, Logic will activate a “Flip-Swap” mode. In this mode the parameter assigned to the encoder will be assigned to the fader, while the fader parameter can be edited with the encoder.

Motorfader Off

If you want quiet during listening, you can turn the movement of the motorfaders off. To do so, use the [Control] button and the [Flip] button at the same time. Pushing the buttons a second time will active the fader movement again.

Overview of the Assignment buttons

Assignment Buttons		
Button	Modifier Button	Function
Track	-	Track Parameter
Pan/Surround	-	Pan and Surround Parameters
EQ	-	EQ Parameter
Send	-	Send Parameter
Plugin	-	Plugin Selection or Plugin Editing
Instrument	-	Instrument Selection or Instrument Editing
Flip	-	Toggle between "Flip Off" and "Flip duplicate" modes
	Shift	Toggle between "Flip Off" and "Flip swap" modes
	Control	Toggle between "Flip Off" and "Flip Zero" modes (Fader motors off)

Recording of Track Automation

Of course you can automate all parameters in Logic Audio. To turn on automation you won't need a mouse! You can comfortably call up the various automation modes with the channel strip buttons of the SAC.

Automation Buttons		
Button	Modifier Button	Function
Read/Off	-	Toggles "Read" Automation mode on/off
	Option	Toggles "Read" Automation mode on/off on all tracks
Touch	-	Switches the Track Automation mode to "Touch" for the selected Track.
	Option	Switches the Track Automation mode to "Touch" for all Tracks.
Latch	-	Switches the Track Automation mode to "Latch" for the selected Track.
	Option	Switches the Track Automation mode to "Latch" for all Tracks..
Write	-	Switches the Track Automation mode to "Write" for the selected Track.
	Option	Switches the Track Automation mode to "Write" for all Tracks.
Trim (SAC-Option + Read/Off)	-	Function not yet implemented by Logic.
Group (SAC-Option + Touch)	-	Function not yet implemented by Logic.

Caution: Automation data is recorded continuously when the according automation mode is enabled. This is independent of whether the Record button in the Transport section is engaged or not. Automation data can be written even during Playback.

Software Navigation

The function buttons

Using the function buttons [F1] to [F7] you can call up the first seven screensets of Logic Audio. Accordingly, you can adjust these first seven screenset in your songs as well as in the default song to your liking. When holding down the [shift] button when you press a Function button, you can alternatively open and close individual windows or put them in the foreground in case they are partially covered by another. A list of the windows that can be controlled with the function buttons can be found in the following chart, which also lists a few additional shortcuts for other functions, which can be accessed in combination with the 8 function buttons. These additional functions can also be called up in connection with the encoder buttons 1-8, by holding down the listed switch button. This way has the advantage that you can actually see the selection choices in the displays.

Function Buttons 1 - 8		
Function Button	Modifier Button	Function
F1	-	Calls up Screenset 1
	Shift	Opens/closes the Arrange window.
	Track	Calls up Volume on multiple tracks
	Pan/Surround	Calls up Pan/Surround on multiple tracks
	EQ	Calls up Bypass on multiple tracks
	Send	Calls up Sends on multiple tracks
	Marker	Jump to the first Marker position
	Nudge	Nudge-Value: Tick
F2	-	Calls up Screenset 2
	Shift	Opens/closes the Track Mixer window.
	Track	Calls up Pan on multiple tracks
	Pan/Surround	Calls up Pan/Surround Radius on multiple tracks
	EQ	Calls up EQ-Type on multiple tracks
	Send	Calls up Level on multiple tracks
	Marker	Jump to the second Marker position
	Nudge	Nudge-Value: Format
F3	-	Calls up Screenset 3
	Shift	Opens/closes the Event List window.
	Track	Calls up Track mode on multiple tracks
	Pan/Surround	Calls up Pan/Surround LFE on multiple tracks
	EQ	Calls up Frequency on multiple tracks
	Send	Calls up Position on multiple tracks
	Marker	Jump to the third Marker position
	Nudge	Nudge-Value: Beat

F4	-	Calls up Screenset 4
	Shift	Opens/closes the Note Editor
	Track	Calls up Input on multiple tracks
	Pan/Surround	Calls up Pan/Surround Mode on multiple tracks
	EQ	Calls up Gain on multiple tracks
	Send	Calls up Mute on multiple tracks
	Marker	Jumps to the fourth Marker position
	Nudge	Nudge-Value: Bar
F5	-	Calls up Screenset 5
	Shift	Opens/closes the Hyper Edit window
	Track	Calls up Output on multiple tracks
	Pan/Surround	Switches into Channel Strip display mode
	EQ	Calls up Q-Factor on multiple tracks
	Send	Switches into Channel Strip" View
	Marker	Jumps to the fifth Marker position
	Nudge	Nudge-Value: Frame
F6	-	Opens Screenset 6
	Shift	Opens/closes the Matrix Editor
	Track	Calls up Automation on multiple tracks
	Pan/Surround	Calls up Angle/Diversity on multiple tracks
	EQ	Calls up Channel Strip on multiple tracks
	Send	Calls up Channel Strip 2 on multiple tracks
	Marker	Jumps to the sixth Marker position
	Nudge	Nudge-Value: 1/2 Frame

F7	-	Calls up Screenset 7
	Shift	Opens/closes the Transport window
	EQ	Calls up Frequency/Gain on multiple tracks
	Send	Calls up Destination/Level on multiple tracks
	Marker	Jumps to the seventh Marker position
F8	-	Enter on the topmost window
	Shift	Opens/closes the Audio window
	Track	Calls up Track Setup on multiple tracks
	EQ	Calls up Frequency/Gain on multiple tracks
	Send	Calls up Destination/Level on multiple tracks
	Marker	Jumps to the eighth Marker position

The Cursor and Zoom functions

Cursor and Jog-Wheel Functions		
<p>The cursor keys of Logic Control are replaced on the SAC-2K and SAC-2.2 by the first two Encoder under the third display. This way you can quickly dial in extreme zoom-settings more efficiently than with repeated button presses. The Zoom enable button is on the push-button of the third Encoder. The display shows at any time whether the Zoom shot mode is active or not.</p>		
Element	Modifier Button	Function
Encoder 1 - Cursor up/down	In the "Channel Strip EQ", "Send" or "Plugin/Instrument-Editor" mode.	
	-	Calls up the next EQ bands or the next Insert Slots
	Otherwise... (however, always in the Nudge mode)	
		Encoder steers the vertical cursor keys of the computers keyboard.
	In the "Zoom" Mode:	
	-	Verticle Zoom setting change
	Shift	Momentarily suspends the Zoom function and can be used to select tracks

Encoder 2 - Cursor left/right	In the "Multi Channel" Mode:	
	-	Call of the next or previous parameter for the current operation
	In the "Channel Strip EQ", "Send" or "Plugin/Instrument-Editor" mode.	
	-	Scrolls the pages of the current editor.
	Alt	Scrolls the parameters of the current editor.
	Otherwise... (however, always in the Nudge mode)	
		Encoder steers the horizontal cursor keys of the computers keyboard.
	In "Zoom" Mode:	
	-	Horizontal Zoom setting change
	Shift	Counter-clockwise rotation: Sets the individual zoom shot back on the selected track. Clockwise rotation: Sets all tracks to the zoom setting of the selected track.
Encoder 3 - "Zoom"-Taste	-	Toggles between normal behavior of the cursor Encoder and Zoom Mode.
	Shift	Toggles between normal behavior of the cursor Encoder and the simulation of the keyboard cursor keys.
Scrub	-	Ein- und Ausschalten der Scrub-Betriebsart.
Jog-Wheel	-	Moves the playback wiper.
	In the "Scrub" Mode:	
	-	Scrubs audio and MIDI

The Track Mixer Element functions

Track Mixer Elements are all control elements which are available for each channel individually. The following chart shows the list of key combinations and shortcuts which are available.

Track Mixer Element Functions		
Element	Modifier Button	Function
Encoder	-	changes the value of the parameter assigned in the display
	Option	Changes the according parameter to the maximum or minimum value
	Alt	The Encoder works in finest resolution
Encoder Button	-	Recalls the non-edited value of the parameter or toggles between two options
	If a selection was made (Display flashes)	
	-	Confirms selection
	In the case of a menu selection	
	-	Track function - the function assigned in the display is released
	If the selected track is a file	
Rec/Ready	-	To the change the file level
	-	Record enable all tracks
Solo	Option	Record safe all tracks
	-	Solo a track
	Option	un-solo all tracks
	With Send Destination/Level on Multi Channel display mode	
	-	Selects Pre/Post Send
Mute	With Send Destination/Level Channel Strip display mode	
	-	Send Pre/Post change over switch.
	-	Mutes tracks
	option	Un-mutes all tracks
	With EQ Frequency/Gain displayed	
	-	Bypass band
	With Send Destination/Level multiple tracks displayed	
	-	Mutes the according FX send
With Send Destination/Level Channel Strip displayed		
-	Mutes the FX Sends on the according channel	
Select	-	Selects track
	Shift	Sets Fader to unity gain and sends 0dB volume

Fader	-	Track volume
	In the Duplicate Flip operating mode	
	-	Parameter currently controlled by encoder also controlled by fader
	In the Swap Flip operating mode	
	-	Exchanges parameter currently controlled by the encoder and controls it with the fader
	With Surround Angle/Diversity displayed	
	-	Surround Diversity control.
	With EQ Frequency/Gain displayed	
	-	Controls Gain of EQ
	With the Send Destination/Level Channel Strip active	
	-	Controls FX send
	With Send Destination/Level Channel Strip displayed	
-	Controls FX sends of selected tracks	

Setting Markers

With the SAC controls you can program markers, erase them and call them up. You can do the latter by pressing the [Store Marker] button and pressing the [REW] or [FWD] buttons. You can set the Marker Program Mode by pressing [Shift] + [Marker], or by pressing the [Marker] button and keeping it down. You will see function names show up in the display, which you can select using the assigned encoder buttons.

1) Programming Markers

To set a new Marker on a full bar position use the soft button “create” while pushing the [Marker] button. If you want to create a Marker that doesn’t adhere to a particular bar/beat position, push the encoder button “CRw/o”

2) Loading stored Marker Positions

Keep the Marker button pushed down and select one of the function buttons [F1]-[F8]. Alternatively you can move forward and backward in the markerlist by pushing the [Marker] button and using [FWD] and [RWD] in the transport field.

3) Erasing a Marker Position

You can also erase a marker position. Select the marker position as describe above. Keep the Marker button down and select the delete function with the according encoder button.

Nudge Operation

The nudge function is used to move sequences and audio objects in the arrange window. You access the nude mode by holding down the [From] button or by activating the nudge mode via [shift]+[From]. Once the nudge mode is activated, the cursor encoders become very important. They reflect the cursor buttons on the computer keyboard. This means you can select the objects to be moved with the two cursor encoders.

There are three different ways to move an object. With the first one you determine a nudge value and move the object by such value. With the second you can enter the move value directly and follow the result in the arrange window. In the

first display you can now see the currently set nudge value as well as the current position of the move object. In the third mode the selected object will be moved to the selected song position.

1) Moving the object by a fixed value

Keep the [nudge] button pushed and use the [FWD] and [RWD] buttons in the transport field. The selected object will be moved forward or backward by the set nudge value. You can adjust the value using the first encoder under the first display. It is called Nudge in the display.

2) Direct Moving

You can move the selected object to you liking with the other assigned encoders. To keep things simple there are different controls which cover different time formats. You can move objects relative to bar or time. The various possibilities are shown in the display.

3) Moving to the Song Position

To move an object to current song position use the “pick-up” function, which is assigned to the second encoder button of the SAC.

Drop-In Programming

The Drop button [Recall Marker] turns on the Drop-In Editor and activates the Drop-in Function. It is very simply to determine a Drop-Zone:

1) Determining a Drop In/Drop Out Zone

Use the Jog Wheel to select the Drop In Position. Press and hold the Drop button [To] and after selection and push the [<<] button in the transport field briefly. You have now set the drop in position.

Now use the Job Wheel to select the Drop Out Position. Use and hold the Drop button [To] button and push the [>>] button briefly. You have now set the drop out position.

2) Editing the Drop Zone

You can also edit the Drop Zone. Use the [Shift] button, keep it pushed and press the Drop [Recall Marker] button. You will see a Drop Channel Strip in the first and second displays.

In the displays the various functions will be shown. Using the first encoder button you can turn the Drop Mode on and off.

The third and fourth Encoder allows moving the Drop Zone. The third moves the Zone by Bar and the fourth by Beat – for instance in a 4/4 bar always by a quarter note to the left or right.

The fifth and sixth Encoder control the position of the Drop In. Here as well you can move the Zone by Bar or Beat.

The seventh and eighth encoder are used for moving the Drop Out Position.

To leave the [Drop] Channel Strip Display press an the Assignment button.

Cycle Mode Editing

The Cycle button [Recall Marker] activates the Cycle Mode, and turns on as the set value the cycle mode for the sector between the first two markers (this is the default). If you push the [Recall Marker] button and use the [<<] and [>>] buttons you can move the cycle region. Of course, this only works if you have programmed markers in the first place!

1) Quickly repositioning the Cycle Locator

You can also determine the Cycle region without existing marker. Use the Jog Wheels to select the Cycle Start Position. Push and hold down the Cycle button [Recall Marker] and push the [<<] button in the transport field. The Cycle Start position has now been set.

Now use the Jog Wheel to set the Cycle End Position. Push and hold down the Cycle button [Recall Marker] and push the [>>] button. You now have set the Cycle End Position.

2) Cycle Editing

The Cycle Mode also has a Channel Strip for additional settings.

Push and hold down the [Shift] Button and push the Marker Button. In the first two display the following parameters are being offered:

Encoder-Button 1 turns Cycle Mode off and on
Encoder Button 2 turns Cycle Mode On and Off according to the current selection in the arrange window
Encoder Button 3 moves the Cycle Zone by Bar
Encoder Button 5 sets the current song position as the left Locator Point
Turning Encoder 5 moves the left Locator by Bar
Turning Encoder 6 moves the left Locator by Beats.
Encoder Button 7 sets the current song position as the right Locator point
Turning Encoder 7 moves the right Locator by Bar
Turning Encoder 8 moves the right Locator in the units of the bar counter

You can leave Cycle Editing Mode by pushing any Assignment Button.

Transport Overview

You will find in the following chart the assignment of all transport buttons in a general overview:

Transport Buttons		
Transport Button	Modifier Buttons	Function
Marker [Store Marker]	-	"Small Marker" Mode
	Shift	"Large Marker" Mode
Nudge [From]	-	"Small Nudge" Mode
	Shift	"Large Nudge" Mode
Cycle [Recall Marker]	-	"Cycle" Mode
	Shift	Edit "Cycle" Parameters
Drop [To]	-	"Drop" Function.
	Shift	Edit "Drop" Parameters
Replace	-	"Replace" Mode
Click	-	Turns on/off the Metronome click
	Shift	Switches between internal and external synchronization as well as "MIDI Machine control"
Solo	-	Solos the selected track
	Shift	Enables the "Solo Lock" function

Rewind	-	Fast Rewind
	Marker	Jumps to the previous Marker
	Nudge	Shifts the current " Nudge" value to the left
	Cycle	Turns on Cycle mode and brings the Cycle in position to the current playback location
	Drop	Turns on Drop mode and brings the Drop in position to the current playback location
	In "Marker" Mode	
	-	Jumps to the previous Marker
	In "Nudge" Mode	
	-	Shifts the current " Nudge" value to the left
FWD	-	Fast Forward
	Marker	Jumps to the next Marker
	Nudge	Shifts the current " Nudge" value to the right
	Cycle	Turns on Cycle mode and brings the Cycle out position to the current playback location
	Drop	Turns on Drop mode and brings the Drop out position to the current playback location
	In "Marker" Mode	
	-	Jumps to the next Marker
	In "Nudge" Mode	
	-	Shifts the current " Nudge" value to the right
Stop	-	Stop
Play	-	Play Song
	Shift	Pause
Record	-	Record !

** The [Cycle]-, [Solo]- and [Replace] buttons are located in the Software Navigation button field, and are available when the SAC-Option button is lit.*