

SAC-2.2

Owner's Manual

Radio and Television Interference

The equipment described in this manual generates and uses radio-frequency energy. If it is not installed and used properly - that is, in strict accordance with our instructions - it may cause interference with radio and television reception.

This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of the FCC rules. These rules are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation, especially if a "rabbit ear" TV antenna is used.

If the SAC-2.2 does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the SAC-2.2 to one side or the other of the television or radio.
- Move the SAC-2.2 farther away from the television or radio
- Plug the SAC-2.2 AC Adapter into an outlet on a different circuit than the television or radio.

Notice:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Important Safety Instructions!

Please read the following safety instructions carefully and before initiating operation of the SAC-2.2. These instructions are intended for your own safety and are helpful in the proper use and operation of your instrument.

- 1.) Please read all the enclosed instructions thoroughly before starting to use the Instrument.
- 2.) Don't use the Instrument close to swimming pools, sinks, washing machines etc. or in a very humid environment.
- 3.) The Instrument should only be used in a location with sufficient ventilation.
- 4.) The Instrument should not be used close to sources of heat, such as heating units, stoves or other heat generating devices.
- 5.) Operation of the Instrument in dusty places should be avoided, as excessive dust can lead to malfunctions of the electronic components.
- 6.) The Instrument should only be plugged into electric outlets which are listed in the manual or are indicated on the power cable/plug.
- 7.) It is advisable to unplug the power cable from the electric outlet during periods of extended non-use to avoid damage from charges due to lightning, atmospheric anomalies or current fluctuations.
- 8.) Avoid stepping on or placing anything on the power cable.
- 9.) Don't unplug the power cable by pulling on the cable. Hold the plug itself and then unplug.
- 10.) When connecting this Instrument to another instrument please follow the instructions in this Manual.
- 11.) Ensure that no objects fall inside the casing and that no liquids are spilled on or into the Instrument.
- 12.) The instrument should be serviced by qualified personell only, in the following cases:
 - a.) the power cable or power supply has been damaged
 - b.) objects have fallen into the housing or liquids have been spilled on or into the Instrument (If this happens, do not power on the instrument! Contact Radikal Technologies)
 - c.) the Instrument has been exposed to rain or other strong excessive humidity,
 - d.) the instrument does not appear to function normally or exhibits signs of change in operational behavior
 - e.) the instrument was dropped or the housing has been damaged.
- 13.) Don't attempt any repairs on your own!! All Service work should be handled by qualified repair specialist ONLY!

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Introduction

The SAC-2.2, or Software Assigned Controller, is the successor to our SAC-2K. These units were designed to provide a hardware solution for controlling music software. This has traditionally been done only with a computer keyboard and mouse, which, as we know, is not particularly conducive to the creative process of recording and mixing music! By providing a hardware control surface, complete with real faders, knobs and buttons, we hope to reduce, if not eliminate altogether, the need to grab the mouse and keyboard during music production, making the entire process more creative and satisfying.

About this Manual

This Manual consists of general information and covers setup and a description of the controls. It also includes the SAC-2.2's specifications, troubleshooting and safety warnings.

Information about the general functionality of the SAC-2.2, you will find in the section, “**General Instructions for Operation**”.

This manual does not include information on how to use the SAC-2.2 with specific software programs, other than a description on the built-in Instrument Editors. This information is provided in program-specific manuals, in .pdf format on the accompanying CD. The very nature of the SAC-2.2 makes this method preferable because while the basic hardware functionality does not change, the supporting software is constantly being updated and improved. This way, the latest firmware and software manuals can easily be downloaded from our website.

Not all Software Programs offer the same level of support and integration with the SAC-2.2. Radikal Technologies is constantly working with Software developers to expand and improve their level of support.

Radikal Technologies has included a number of preset editors built in to the firmware of the SAC-2.2. In the chapter “**Using the Instrument Editors**” you will find out how to call up and use the Editors.

Radikal Technologies assumes no responsibility for the functionality in connection with Software programs described in this Manual. The functionality is largely dependent on the implementation in the Software programs, a process encouraged but not controlled by Radikal Technologies. However, we work very closely with the various Software companies to enable the most comprehensive implementation possible.

Connections and Operation

Ideally, you should position your SAC-2.2 directly in front of your Computer Monitor, so you can view changes on your Monitor as well as on the SAC-2.2 surface. The power supply is located in either the left or right section of the original shipping box. The power supply included is designed for 110-120V/60Hz (USA) or 220-230V/50Hz (central Europe) operation. Connect the power supply with the SAC-2.2 first, using the small connector plug. Then, plug the power cable into any available power outlet in your studio.

Connections between the Computer and the SAC-2.2 can be made either via MIDI or USB.

For USB, connect the 'Type A' (flat) end of the USB cable to an available USB port on your computer and connect the 'Type B' (square) end of the supplied USB cable to the jack on the rear of the SAC-2.2 labeled "To Host".

Install the USB software driver after connecting the SAC-2.2. Follow the directions on the Read Me file, as instructions differ slightly between Mac and PC. After the USB driver is installed, configure your host software accordingly.

For MIDI, connect the MIDI Output from your MIDI interface to the MIDI Input of the SAC-2.2. Connect the MIDI Input of your MIDI interface with the MIDI Output of the SAC-2.2.

If you are using Music Software that directly supports the SAC-2.2, you can now start the program and configure it for communication with the SAC-2.2. Follow the instructions in the .pdf manual for your particular program to set up the SAC-2.2.

When turning the unit on you will also see information in the right LCD display on the SAC-2.2 that will inform you what the current Firmware Version of the Controller is. When contacting Technical Support, it is important to provide us with the Firmware Version for effective service, as the SAC-2.2 as well as the supporting programs are consistently being improved and updated.

General Instructions for Operation

This chapter describes basic operational concepts, which are designed to work when the SAC-2.2 is supported by Host software with implementation in accordance with our Logo Requirement Program.

The SAC-2.2 hardware controller has been designed primarily for use with Audio and MIDI Recording Software. Since the SAC-2.2 is a universal controller that works with many different music programs, the decision was made to label the buttons for use with programs that conform with our guidelines. In cases where the labels do not directly apply to a particular program, templates are supplied that fit around the buttons, labeling the buttons with appropriate names.

Depending on which software program you are using, it is possible that not all of the desired features have been implemented fully and in accordance with our operational concepts. The degree of support will continuously improve with upcoming software updates. This means that the controller support will increase with each new software version. Because of the “open” design of the SAC-2.2, you can look forward to future updates, which will improve the functionality, performance and power of your unit with each release.

USB vs. MIDI

Whether you decide to hook up your SAC-2.2 via USB or MIDI, the functionality is the same. Of course, there are benefits to using the USB bus. These include less latency, noticeable during complex automation moves and slightly quicker display refreshes. Also, if you only use the audio functions of the software and don't use MIDI, you won't need to buy a MIDI interface!

Using the USB bus also gives you opportunity to use multiple virtual MIDI ports. For example, they can be used for sending controller data from the Instrument Editors independently from the port which is used for the Host software.

Other advantages when using USB include the use of the built-in 1-in, 4-out USB hub for hooking up other USB peripherals. Also when the USB hub is in use, the SAC-2.2's MIDI ports can be used as a MIDI interface, convenient for connecting a desktop keyboard controller, for example.

Basic Operation Concept

In this chapter you will find an introduction to the SAC-2.2's general operational concepts. These were the basis for the design of this Controller. A more detailed analysis is provided within the chapters following.



The SAC-2.2 has the following control elements:

- 9** Touch Sensitive motorized 100mm Faders
- 12** Rotary Encoders with 31 segment LED Rings, Encoders have a switch function
- 3** 2 x 40 Character Hi Contrast LCDs
- 1** SMPTE / Locator Display
- 9** Track Select Buttons
- 8** Mute / Solo Buttons
- 10** Buttons for selection of Mixer Parameters (Pan, Send/Insert, Switch, Send/Insert 1-4, 4 EQ Select Switch)
- 6** Buttons for track category selection
- 4** Buttons for Track Group Selection
- 12** Software Navigation Buttons, which can also be used for numeric input
- 5** Channel Strip Buttons
- 5** Buttons for Transport Control (Play, Record, Stop, Rewind and Forward)
- 1** Jog Wheel
- 4** Marker Buttons
- 1** Scrub Button
- 1** System Button
- 1** Shift Button

Aside from the Transport functions and Software Navigation, the main emphasis of the SAC-2.2 is placed on the direct control of Software Mixers and Sound Parameters via Encoders, Faders and Buttons.

In Mixer Mode, you will be able to simultaneously edit one parameter each for a group of 8 tracks or, by using the Channel-Strip Mode, change multiple parameters of one selected track. By touching one of the Channel-Strip buttons, which are located on the right side of the control surface, the designated parameters will be assigned to the twelve Encoders below the displays. By touching a button in the "Mixer Mode" section, which is located between the two fader groups, the Controller reverts to the operation mode for simultaneous editing of a maximum of 8 tracks at a time.



Parameter Selection for Mixer-Mode



Parameter Selection in Channel Strip Mode

Depending upon the implementation of the Host software, you have two choices for selecting individual Fader Groups of 8 Faders each. First select a track category. To do this you push one of the 6 possible select buttons [Audio], [MIDI], [Instrument], [Input], [Bus] or [Group]. For programs that conform with our development guidelines, each of these categories there are groups of 32 Faders [1-8], [9-16], [17-24] and [25-32]. With these selection options, you can address a maximum of 5 groups of 32 tracks, which equals 160 addressable tracks. By selecting the [Group] switch, it is also possible to configure the 160 tracks into Fader Groups of 8 each, to enable the combination/grouping of category independent Faders.

Many programs, that operate in Slave mode for example, use a different method of bank switching. These include Digital Performer, Pro Tools, Cubase and Nuendo. These programs use the 1-8 and 9-16 buttons to advance through the tracks one track at a time and the 17-24 and 25-32 buttons to advance through the banks 8 tracks at a time for as many tracks as the computer can play back.

The Master Fader is independent of all these settings. It is always used for the master level.

In addition to level control with the Faders and parameter controlling Encoders, the SAC-2.2 also has [Solo]/[Mute] and [Select] buttons. Their functions are always available, independent of the selection of the Channel Strips.

The Channel Strips offers many options to allow editing of many parameters of the Host software. Many parameters can be edited from one SAC-2.2: the clear illustration of all EQ parameters of a track, changes of the MIDI setting of a track, displaying of all audio related parameters and the editing of Plug-ins and software synthesizers. The Host software will update the Displays, Motor Faders and Encoders continuously via MIDI or USB-MIDI. In the following chapters we will describe the individual operation elements of the SAC-2.2 in more detail and give many tips and suggestions for the successful use of the SAC-2.2's many possibilities.

The Motorized Faders

The Motorized Faders of the SAC-2.2 are touch sensitive. The Host software receives a signal when a fader is touched. This way the controlled program can differentiate between an automated fader movement and user interaction. Refer to the section called "System Menu Parameters" for descriptions on the user-adjustable Fader Motor parameters.

The Rotary Encoders

The Rotary Encoders have display rings with 31 red LED segments. These LEDs are addressed directly by the Host software, when in Slave mode. Using slow movements allows the values to be changed in increments of 1 step up and down. Fast turns allow smooth increases or decreases across the whole value spectrum with only one complete rotation of the Encoder. This allows use of the Encoder in a potentiometer like fashion. Additionally, the Encoders have a Push-button function. This function is used by different programs in different ways. The following are some examples:

- 1.) The resetting of a parameter to a default value (i.e. Pan = Center).
- 2.) Turning on/off of a function (i.e. turning on/off E.Q.).
- 3.) Calling Up Alternative parameters.
- 4.) Selecting a routing target (i.e. Buss select of Effect Sends)

Refer to the section called "System Menu Parameters" for descriptions on the user-adjustable Rotary Encoder parameters.



The Displays

Three 2 line x 40 character displays show information relevant to the mode selected. In Mixer Mode, track names will be displayed. During editing, parameter names and values are displayed. The third display will often show additional editing data. Under normal circumstances you can continue to edit parameters of the selected track. In Channel Strip Mode the three displays together with the 12 encoders provide simultaneous control of up to 12 parameters of a single channel.

The Transport Field



The transport field provides the usual functions such as Start, Stop, Record, Fast Forward and Rewind as found in your sequencer environment. Specific functions and button combinations can be found in the .pdf manual for your particular program.



The Jog Wheel

The Jog Wheel is intended primarily to move the playback wiper. In connection with the Scrub button it should be possible, depending on your Hardware and level of software support, to monitor (scrub) the Audio material. It may also be possible to mark an area/section by using the [From] and [To] buttons, depending again on the level of software support.

The Marker Functions

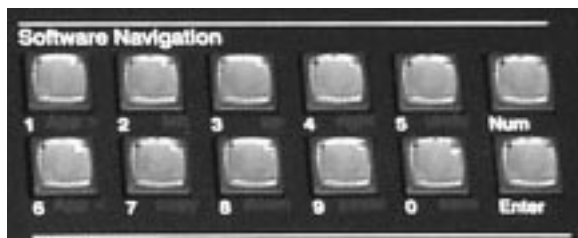
The Marker buttons are located around the Jog Wheel. Depending upon the Host software, with a combination of the Recall Marker and the [Num] buttons it might be possible to enter, call up and change markers. These marker positions are not stored in the SAC-2.2's memory, rather in the Host software. The Marker buttons provide an alternate means for the control of the marker functions found within in the Host Software.

The Locator Window



The locator window always displays the current bar, SMPTE position or sample number of the Host software. In most software programs you can determine, the time or bar format shown in the display.

The Software Navigation Buttons / the Num Button field



Above the Locator window are the buttons for software navigation and numeric value input. These buttons are provided for multiple uses. A common function of these buttons is to select different screensets or window arrangements in the Host software. Again, the functionality of these buttons depends upon the Host software and specific assignments can be found in the Host software's .pdf manual.

The Mute / Solo Button

It is possible to select the function of the [Mute] / [Solo] button with the button on the top left of the SAC-2.2. When the switch is lit, the solo function is activated. You can mute one or more tracks (Mute function) or listen to one or more tracks by themselves (Solo function).

The Select Button

The [Select] Buttons are provided for track selection. In conjunction with the Channel Strip mode, they determine the track to be edited.

The [Select] buttons change the contents of the Channel Strips. Depending upon the selected track, the activated Insert Effects, EQs etc. for this track are automatically displayed. In most cases, this will eliminate the cumbersome opening and closing of windows.

The Shift Button

The [Shift] button is intended for addressing additional functions and is included in the description of the other buttons.



The Track Category Selection

To facilitate navigation between the various tracks, the SAC-2.2 has Track Category Selection buttons. As labeled, for each category there are 4 groups of 8 tracks available, or a total of 32 tracks. (Once again, this depends upon the track selection methods of the Host software!) The four groups of eight are selected with the Track select buttons.

A summary of the different categories:

Audio: Includes all Tracks, which contain digitized audio signals, or which are available for the direct recording of audio signals.

MIDI: MIDI tracks contain only MIDI data, which are to be sent to external MIDI instruments. (A separate category for VST instruments or other native synthesizers is not covered in this category). For each MIDI Instrument only one Mixer Channel is assigned - regardless of whether the MIDI events of the according channel occur on more than one sequencer track.

Input: All "Live Inputs" are grouped in this category. These are tracks that are routed through the Mixer of the host software, but are not recorded in the Sequencer.

Inst: VST instruments and all other native synthesizer applications offered by the host software, are grouped in this category

Bus: Output busses and subgroups. These are often used for the "resource saving" insertion of Plug-in effects.



The Track Group Selection

Four Eight-Fader Groups can be addressed with the Track Group button as labeled on the SAC-2.2's surface, or are used to switch tracks/banks depending upon the method used by the Host software.



The Mixer Mode Parameters

By pushing one of the Mixer Mode buttons you can leave the selected Channel Strip Mode and assign a parameter to the Encoders. This makes it possible to edit the selected parameter on the eight selected tracks. Additionally, you can change four more parameters of the currently selected track in the third display. These four parameters will be selected by the “Mixer Mode” Parameter. The specific assignment is decided upon by the Host software. Following you will find a brief explanation for each of the Parameter buttons:

Pan: [Pan] assigns the Panorama position control to the Encoder. If a stereo track is selected it controls the Balance. The push-button function of the Encoder defaults the value to the center position. Related parameters for the third display, in the case of Audio, Instrument, Input or Bus Tracks are: Input routing, Output routing, switching between Mono and Stereo tracks, as well as a Bypass function for Plug-ins. For MIDI tracks it is possible to select a MIDI Channel, MIDI Output and Bank Select number.

High, HiMid, LoMid, Low: These buttons directly select up to four EQs. The Gain parameter is assigned to the eight Encoders. The Encoders Push-button function will either reset the Gain parameter to the default value of 0db, or set the EQ to Bypass position, depending upon the Host software.

The third display shows the parameters of the selected EQ. This includes: the Bypass on/off state, the EQ characteristics (Shelving, Parametric, Cut, etc.) and the setting of the filter frequency and quality.

Send/Ins: This button changes the operation mode of the Send/Insert Select buttons. This enables the direct selection of four Effect Sends, as well as four Inserts.

Send/Insert: These four buttons select one of the Sends or Inserts 1-4 depending on the selection of the Ins./Send button. When addressing a Send the Encoders adjust the Send level, when addressing an Insert, the Encoders adjust the volume or relative level of the Source and Effect signal. Pushing the Encoder buttons will default Effect Sends to their normal position and Inserts to the Bypass position. When selecting an Insert the third display will show the Plug-in selection as well as the most important parameters of that Plug-in.

For more in-depth editing you can call up the Channel Strip [Inserts/Sends]. When using an Effect Send you can select, in the third display, the Effects Bus to which the Effect Send of the selected track is routed. As systems with more than 4 Effect Sends become available, this will allow the User to be able to assign four of the many possible Effect Sends to each track. Also, in the third display you can switch between Pre/Post.



The Channel Strips

The Channel Strips enable the simultaneous editing of up to 12 Parameters. The division into different categories enables fast access to many different areas of the Software without tedious searches. In case more than twelve Parameters are offered in a category (for instance during synthesizer editing or when multiple Insert Effects are used on a Bus or on an Audio Track), you can call up different edit pages by repeatedly pressing the category button. Many pages have parameters in common, that you may want to use in some Host Applications, either on one complete track or solely for one object of a track. This is why the SAC-2.2 offers different selection modes when operating them. Select a track with the [Select] button. Then, by using the Cursor button in the NUM Field, a single object of this track can be selected. You will find additional tips regarding the different Channel Strip on the next page:

Inserts/Sends: These Channel-Strips enable the editing of Insert Plug-ins. The selection should be made depending on the selection of the Effect Sends or Inserts of the Mixer-Specific-Parameters. As an example: You have selected Track 3 and the third Effect Send of this track. Let's assume you have routed Send 3 to the fifth Effects Bus. Now when you use the Insert/Send-Channel Strip, the Plug-in Effects of the fifth Bus will automatically appear on the surface of the SAC-2.2. It is very helpful in this regard, that the Plug-in Window(s) appear(s) automatically during selection of the Channel Strips on your computer monitor, lending visual support to the selection. In this case the window whose parameters are on the channel strip will appear in the foreground. When exiting or changing a Channel Strip, these windows will automatically close. Of course this kind of functionality is largely dependent on the implementation of the Host software. Radikal Technologies has no control over this process, however according suggestions have been included in the relevant Developer Guidelines.

Dynamics: Some Audio programs have independent sections per Track for Dynamic Processors, such as Compressors/Limiters. Also, some hardware products, like the Yamaha DSP Factory, have dedicated hardware. For this reason the SAC-2.2 has a dedicated Dynamics Channel Strip. 12 Parameters at a time are available and it is possible to display multiple edit pages. It is also possible to program additional windows to open automatically upon entering Dynamics Edit Mode.

MIDI: This button provides access to MIDI parameters on the MIDI and Instrument tracks. Included are routing settings such as MIDI Channels and Outputs, and the selection of virtual Instruments. Also, MIDI parameters like Program Change, Panning etc..., as well as Playback Parameters like Quantizing, Track Delay, Transposition, etc...

Instrument: (Use of Instrument Editors:)

The SAC-2.2 contains a set of integrated Editors to address VST Instruments - even without completed implementation of Channel Strip support in the Host software. Some virtual instruments such as the Pro 52 by Native Instruments exist as independent versions for operation without Host software. The integrated Editors can be used for this purpose. You can access the Editors of the SAC-2.2 in "Slave" mode - in operation with a Host software - as well as in "Active" mode. In all other respects the operation is identical. In cases where the Host software already supports the Channel Strips, the Editors automatically are replaced by the transmitted Parameter assignments. By double-clicking the [Instrument] button you can force a call-up of the integrated editors. You will appreciate this feature, especially if you prefer our Editors to the ones generated by the Host software. Click the [Instrument] Button to reach the Editors. This will place you automatically in the Editor section of Native Instruments Pro-5/52. You can now access various Editor pages by repeatedly pushing the [Instrument] button. With every push of the [Instrument] button the next Editor page will be accessed. Using the [Shift] button in conjunction with the [Instrument] button scrolls the editor pages in decreasing order. Using the [Instrument] button together with one of the [NUM] buttons 0-9 dials up Editor pages directly. To dial up other Editors hold down the [Instrument] button and select the Editor with the Jog wheel.

Instrument Editors:

You have 32 temporary memory locations for Instrument Editors. Each memory location store the following:

- 1.) The MIDI port (standard, USB3-5)
- 2.) The Editor selection (Pro5, B4, EXS-24, etc.)
- 3.) The MIDI Channel (1-16)

Selecting the memory location:

Press and hold the Instrument Channel Strip button and select the desired location with the Select and Track Group buttons (1-8, 9-16 etc)

Selecting another Editor:

Press and hold the Instrument Channel Strip button and rotate the Jog Wheel to select from the list of Editors.

Selecting the MIDI Channel and MIDI Port:

The last Editor page always shows the MIDI Channel and MIDI port. They can be selected with the assigned rotary encoder. Default is no MIDI Channel and USB 3 . If you want to clear a MIDI Channel assignment, you can set it to “Off” by pressing the MIDI Channel selection rotary encoder button.

TIP: The SAC-2.2 warns you if you try to change a parameter at your editor without any MIDI channel selection. Instead of the parameter value “NoMidiChn” (No MIDI Channel) will appear.

ProTools Tip:

To open an Instrument Editor when using Pro Tools, you must double-click the Instrument Channel Strip button. Otherwise the button is used for the default HUI function, which is the Plugin Compare function. You can exit the Instrument Editor mode by pressing any Mixer parameter, or other Channel Strip button.

Storing the Editor/MIDI Port and Channel configurations:

You can dump your Editor settings with [system]+[instrument]. The sysex messages will be sent over the configuration MIDI port, which is independent from all other MIDI ports. The SAC-2.2 will receive this configuration data at all MIDI ports.

Troubleshooting:

Be careful with the standard port. Some applications which support the Slave mode of the SAC-2.2 will ignore any MIDI messages beside the messages which are specified inside the Slave mode specification.

The Synth Editors will not work or will cause error messages inside the Host application because some of the controller numbers of the editors have other functions inside the Slave mode. This is the case with Digital Performer. Some editors will cause DP to behave erratically because certain values of some controller numbers are used inside the Slave mode are for specifying a button number of the SAC-2.2. Rotating an encoder inside the Synth Editor then appears to DP like a user is pressing one button after the other in a very

short time. In "Slave mode supporting applications" the standard port should only be used when the selected MIDI channel is not equal the system channel !!! Nothing strange can happen if you use a different MIDI channel for the Synth Editors.

The Editors can receive controller numbers to update the encoder positions according to the selected sound. If you have selected the standard port and the system channel you might have another problem, though. Messages from synths and from the Host application can't be separated because the SAC-2.2 cannot differentiate and responds to both. In the signal flow the Synth Editor is in front of the Slave mode. When in this situation the Host application

sends button LED data or encoder LED messages which can possibly change the Synth Editor parameter values but not the lights and LEDs of the SAC-2.2. For that reason once again - the standard port should only be used inside Slave supporting applications when the MIDI Channel is different from the system channel of the SAC-2.2.

The following Editors are currently supported:

Native-Instruments Pro Five
Native-Instruments Pro 52
Native-Instruments B4
Native Instruments Premium Library SH2K
Native Instruments Premium Library Many Mood
Native Instruments Premium Library Three Osc
Native Instruments Premium Library Me2SalEM
PPG WAVE 2.V
Steinberg Model E
Emagic EXS-24
Emagic ES-1
TC-Works Mercury 1
Pulsar EDS8i
Pulsar EZ Synth
Pulsar Inferno
Pulsar MiniSynth
Pulsar BlueSynth
Pulsar Vocoder
Pulsar U-Know 007
Pulsar Vectron
Reason Subtractor
Reason Dr. Rex
Reason NN-19
Reason Redrum Mixer
Zarg Orion v.2.0
Zarg Dark Star

New Instrument Editors are continually being added to the SAC-2.2 firmware. New Editors can be downloaded from our website as they become available.

Information regarding use with specific programs

One common feature when the SAC-2.2 is controlled by any Host software package is it works in “Slave Mode”. In this mode, the SAC-2.2 is passive and basically acts as a “dumbwaiter”. The software accepts commands sent by the SAC-2.2 and sends messages back to the SAC-2.2. For example, pushing a button on the SAC-2.2 does not automatically make an LED light up. The light activation of the LED is completely controlled by the Software. If a particular LED does not light up after being pushed it's an indication that the relevant software is not utilizing this button yet. It's not an indication of a malfunction of the SAC-2.2, but rather an indication of the level of support for the SAC-2.2 (or lack thereof) the software has.

Because there are such a wide variety of software programs available, and these vary a great deal in functionality and features, it would be impractical to write a manual for the SAC-2.2 and have it be current for any length of time! Also because various programs have various levels of support, we adopted the concept of using software .pdf manuals.

System Parameters

Enter the SAC-2.2 System pages by pressing the System Button. Here you will find parameters relating to the general operation and functionality of the SAC-2.2.

To access the additional System pages:

Hold down the System button while pressing the [FF] or [REW] buttons to step through the pages.

System Menu (page 1)

Mode: the operating mode of the SAC-2.2

[ACTIVE] - for use with programs that do not directly support the SAC-2.2. In this mode, the SAC-2.2 sends channel data (faders, encoders...) on multiple MIDI channels. This is intended for use with software that can receive MIDI data on multiple MIDI channels. Programs that do not support the SAC-2.2 directly but include Generic Remote Control Surface support in their feature set can often be controlled using Active Mode.

[LOGIC] - for use with Emagic's Logic Audio. * Native support for Logic Audio is currently under development. At present, use of this mode requires a custom environment, which is available for download from our website.

[SLAVE] - for use programs that directly support the SAC-2.2. In this mode, the SAC-2.2 sends its data on one MIDI channel, and the Host software interprets and maps the data accordingly. The Host software is then responsible for sending back data to the SAC-2.2 for updating fader positions, LED on/off status, display text, etc.

[PROTO] - for use with applications that support the HUI protocol, such as Digidesign's Pro Tools.

[PULSA] - for use with Creamware Pulsar. This mode is similar to Active Mode, except that Continuous Controller data on MIDI channel 16 only is used to send channel-specific data (faders, encoders...) instead of using a separate MIDI channel for each fader, encoder, etc... * Preconfigured templates can be downloaded from our website.

[REASN] - for use with Propellerheads' Reason. This mode is similar to Active Mode, except that Continuous Controller data is used to send channel-specific data (faders, encoders...) instead of using a separate MIDI channel for each fader, encoder, etc... In Reason mode, the mixer mode is assigned to MIDI channel 16.

Chan: the MIDI channel the SAC-2.2 is currently set to receive data on
[1-16]

Motor: turns the fader motors on/off
[On, Off]

Input Timeouts (page 2)

Fdr: the time interval in milliseconds that the faders respond to incoming data. For example, at the default value of 5ms, the fader positions are updated every 5 milliseconds.
[0-255]

Input Maximum Deltas (page 3)

Dial: the time interval that the encoders send data, in milliseconds. For example, when turning the dial with the default value of 30 ms, data is sent to the software every 30 milliseconds.
[0-255]

Dmax: the maximum percentage of parameter value added to or subtracted from the value of the data being sent to the program, determined by the rate at which the dial is rotated. For example, when turning a dial faster, the value of the data sent to the software increases, instructing the software to increment that particular parameter value at a faster rate than if you turn the dial slowly. Some programs are not compatible with this type of control, and can only accept value changes of +/- 1 at a time. In this case, use a Dmax value of 1.
[1-64]

Jog: the interval in milliseconds that the jog wheel sends data. For example, when turning the jog wheel with the default value of 30, data is sent to the software every 30 milliseconds
[0-255]

Jmax: the maximum percentage of parameter value added to or subtracted from the value of the data being sent to the program, determined by the rate at which the jog wheel is rotated. For example, when turning a dial faster, the value of the data sent to the software increases, instructing the software to increment that particular parameter value at a faster rate than if you turn the dial slowly. Some programs are not compatible with this type of control, and can only accept value changes of +/- 1 at a time. In this case, use a Dmax value of 1.
[1-63]

Visual Parameters (page 4)

Value: the amount of time that the value of a modified parameter stays visible in the display before reverting back to the parameter name (only available in Active mode and with Instrument Editors). The Value parameter's default value is 40. Each value unit is 32ms long. This means that a value of 40 is 1280 ms, or about 1.3 seconds. *This parameter may not be available in all System modes. For example, in Slave mode, the availability of this parameter depends upon the level of support from the Host software.
[0-126, On]

Blink: adjusts the blink rate of the LEDs.
[1-127]

Fill: determines whether the Encoder LEDs are displayed in a "Fill Style" or single segment style.*This parameter may not be available in all System modes. For example, in Slave mode, the availability of this parameter depends upon the level of support from the Host software.
[On-Off]

Help: turns on/off the online help page in the center display.
[On-Off]

Diagnostics (page 5)

MidiMon: a diagnostic tool that turns on/off a MIDI Monitor function that shows the most recently received MIDI message in the Locator display.

Tips for developers

If you are interested in the development of Software Intergration for the SAC-2K please contact our design department. You can reach this department under the following e-mail address: "developer@raditec.de".