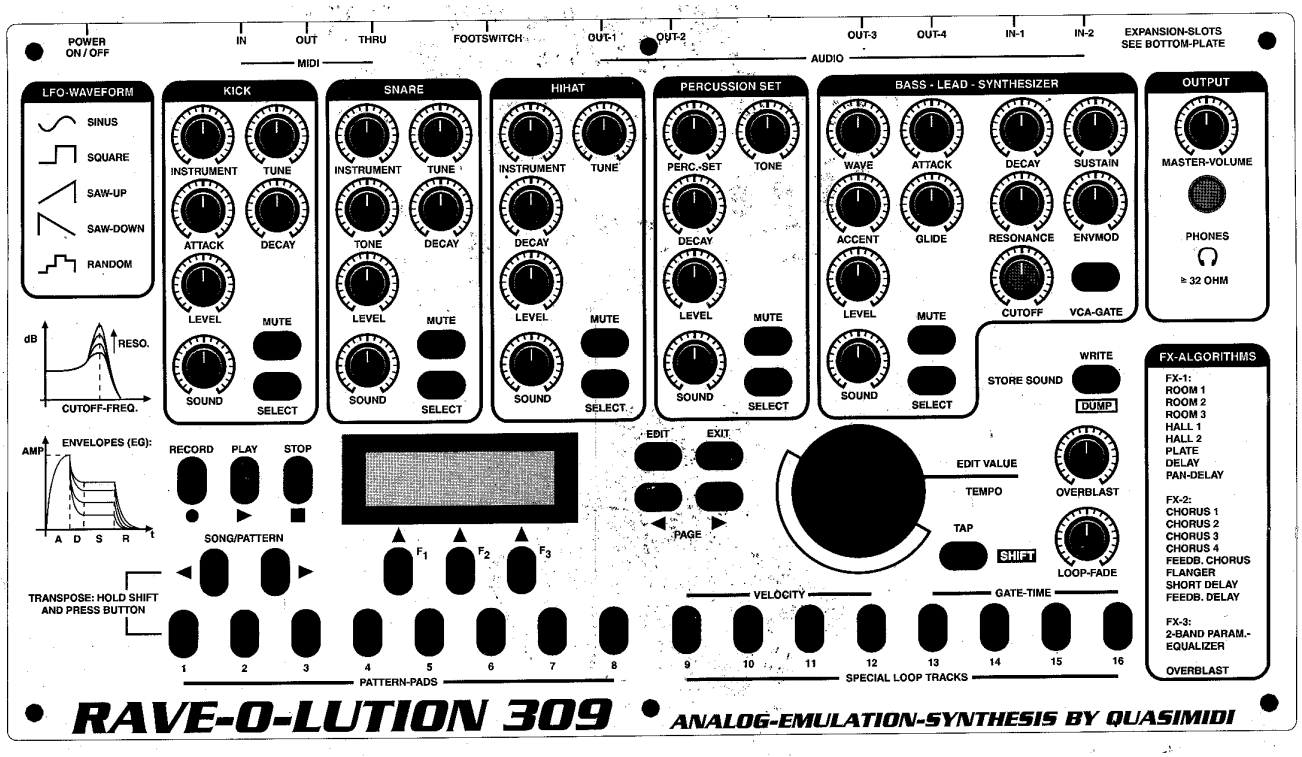
RAVE-O-LUTION 309

Owner`s Manual



QUASIMIDI

Synthesizers made in Germany

Downloaded from www.Manualslib.com manuals search engine

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products' enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this appliance.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

IMPORTANT SAFETY INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

1. Read all the intructions before using the product.
2. Do not use this product near water - for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. Avoid using the product where it may be affected by dust.
8. The product should be connected to a power-supply of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to operate normally or exhibits a marked change in performance; or
    E. The product has been dropped, or the enclosure dammaged.
15. Do not attempt to service the product beyond that described in the user-maintanance instructions. All other servicing should be referred to qualified personnel.

SAVE THESE INSTRUCTIONS

CE

Die CE-Marke auf unseren netzgespeisten Geräten deutet auf deren Übereinstimmung mit den EMC- und CE-Richtlinien der EG (respektive 89/336/EWG) hin. Zur Beurteilung der Erzeugnisse hinsichtlich elektromagnetischer Verträglichkeit wurden folgende Normen herangezogen:

Störfestigkeitsprüfung nach		**EN 50082-1**
Emmissionsmessung nach		**EN 55014**
Niederspannungsrichtlinie	**bewertet nach**	**EN 60065**

The CE-Sign on our products declares that our electrical devices are in conformity with the EN 55014 and EN 50082-1(in accordance with 89/336 EMC- and EEC directive). The manufacturer also declares the conformity of above mentioned product with the actual required safety standards.

See page 31 concerning FCC regulations

Downloaded from www.Manualslib.com manuals search engine

Important Information
Read before using !

In order to ensure long product life, observe the following:

- Do not attempt to service this product. Refer all servicing to a qualified technician. Any attempt to service this product by those other than authorized personnel will result in the risk of electrical shock and void the warranty.
- Read the Owners Manual before using the instrument.
- Do not use this product near water.
- Maintain an adequate airspace around the unit to ensure sufficient ventilation, to avoid overheating.
- This instrument should not be operated near heat sources, such as, hot sun, radiators, etc ... .
- Avoid using the unit in dusty environments.
- For cleaning use a moistened cloth or a duster. Do not use solvents, such as thinner.
- Only use the power supply that was supplied with the unit, or one with an equivalent rating. (see Specifications)
- If the unit is not used for an extended period of time, unplug power supply from wall socket.
- Do not operate unit during electrical storms, and disconnect power supply from wall socket.
- When using the 309 with other instruments, refer to this manual to ensure a proper interface.
- Be careful not to spill liquids into the unit.
- If liquids spill into the unit, immediately disconnect power supply and contact an authorized Quasimidi dealer if the unit has malfunctioned
- Refer the instrument to qualified personnel for servicing if:

a.) The power supply or its wire are damaged
b.) Liquids spill into the instrument
c.) The instrument operates abnormally or exhibits a marked change in performance
d.) The instrument was used during an electrical storm and no longer functions
e.) The instrument has been dropped and no longer functions

- Make no attempt to service or repair this product except for the user maintenance described in this manual. All other servicing or repairs should be performed by qualified personnel. Failing to do so will result in voiding the warranty.
- Save the shipping carton for use in the unlikely event the unit must be returned for servicing. Always call for a Return Authorization number before shipping unit for service.
- Always unplug the power supply whenever the unit's cover is opened!
- Use only original Quasimidi expansion boards and upgrades since third-party circuit boards or other accessories may void the warranty.
- Onboard memory is backed up with a Lithium battery (CR 2025), that usually needs to be replaced every five years. When replacing batteries, please respect our environment and dispose of old batteries properly.

WARNING: The use of factory-programmed Motives and Patterns contained in the 309 for music production is allowed. However, commercial use of Samples and/or Sounds and/or factory-programmed Patterns contained in the Rave-O-Lution 309, such as on Sampling CDs, the Internet, diskettes or other media, is strictly forbidden without written authorization from QUASIMIDI-Musikelektronik Ltd. ph: +49 6422-9402 0

Contents:

Important Information 3

Introduction 4
- Contents of Package 4
- Optional Accessories 4
- Unpacking and Inspection 4
- Connections 5

Getting Started 5
- Initialization 5
- Turning the Knobs 5
- What is A.E.S. ? 6

An Overview of the 309 6
- A description of the sections 6
- The Mix-Parameters 7

Sound Programming 8
- The Kick-Drum-section 8
- How to Store a Sound 10
- The Snare-section 10
- The Hihat-section 11
- The Percussion-set 11
- The Bass/Lead Synth-section 13
- The Effects-section 13

The Sequencer 14
- MIDI Connections 14
- Functions of the Sequencers 14
- Programming Drum Grooves with the Drumgrid 14
- Using the Step Sequencer with the Bass/Lead Synthesizer 16
- Storing a Pattern 17
- Using Patterns to create a song 17
- Storing a Song 18
- The Mastertrack 18
- Using the 309 in a Live Performance 18
- Using the Pattern Buttons 18
- The 'Special-Loop-Track' Buttons 18
- Adjusting the Tempo 19
- The Loop-Fade control 19
- Syncing with another Sequencer 19
- Using the 309 with a computer 19
- Bulk Dump of all parameters 20

The Edit-System - menu 20

Waveform and Sample Listing 22

MIDI Controller Listing 23

System Exclusive Information 23

MIDI Implementation 28

Warranty 29

Specifications 30

Downloaded from www.Manualslib.com manuals search engine

Introduction:

Thank you for purchasing the RAVE-O-LUTION 309. The 309 provides a state-of-the-art, technological music production tool that was developed and manufactured in Germany. QUASIMIDI is very pleased that some of your comments and suggestions helped in the development of the 309. QUASIMIDI has always had, and will continue to have, an open ear for good ideas - no matter where they originate. We realize it is the people in the field, who actually use our products, that are the most important.

Unpacking:

Attention: Do not use a knife or other sharp object to open the 309 box.

The Rave-O-Lution 309 is secured in its' carton with styrofoam supports. Lift the instrument with the styrofoam together from the carton, then remove the foam. The power supply is in a seperate box located in the styrofoam.

Contents of Package:

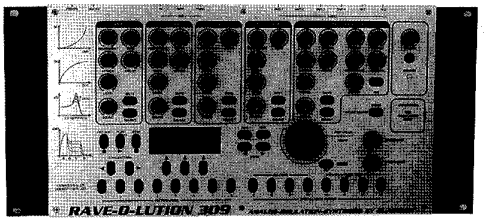
The Rave-O-Lution 309 is shipped with the following parts:

- (1) RAVE-O-LUTION 309
- (1) Power Supply
- (1) Owners Manual
- (1) Registration Card

Optional Accessories:

QUASIMIDI offers the following accessories for the Rave-O-Lution 309:

Rack Mounting Kit:



The Rack Mounting Kit allows the 309 to be mounted into 5 spaces of a standard 19" rack. The 'ears' are attached to the 309 with provided screws.

In/Out - module:

This expansion board provides the 309 with two additional Audio Outputs and also two Audio Inputs, which can be used to process any external, line level signal. Virtually any source can be used, such as a synthesizer, an electric guitar, a CD-Player or your voice (through a microphone). This external signal can then be processed by the 309's excellent Filters and Effects.

Additional Expansion Modules:

On the underside the Rave-O-Lution 309 is a panel which provides access to the Operating System chip and two ports for Sound Expansion modules. The Sound Expansion Modules provide additional Waveforms, new Filter Models and New Patterns.

Flightcase:

A padded Flightcase provides protection when transporting the Rave-O-Lution 309. In a pinch, the original box can be used when no case is available. When given a choice, a padded flightcase is always preferred.

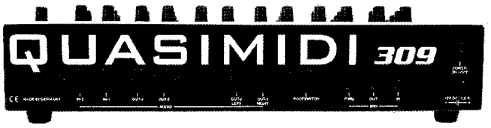
Use only Genuine QUASIMIDI accessories in your Rave-O-Lution 309. Only Genuine QUASMIDI parts are guaranteed for faultless operation in the Rave-O-Lution 309. Installing third-party modules can void the warranty and may cause improper operation of your instrument.

Connecting the power supply:

Take the included power supply out of the box. Plug the smaller, coaxial plug into the jack on the rear of the 309 marked "10,5VDC/ 1,5A" (US: "12VDC/2A"). Plug the other end into a standard 230VAC (US: 120VAC) wall outlet.

Manufacturer: QUASIMIDI Musikelektronik Ltd.
Eisenbahnstrasse 13
D-35274 Kirchhain
Germany
ph +49 6422 9402 0
fx +49 6422 9402 44

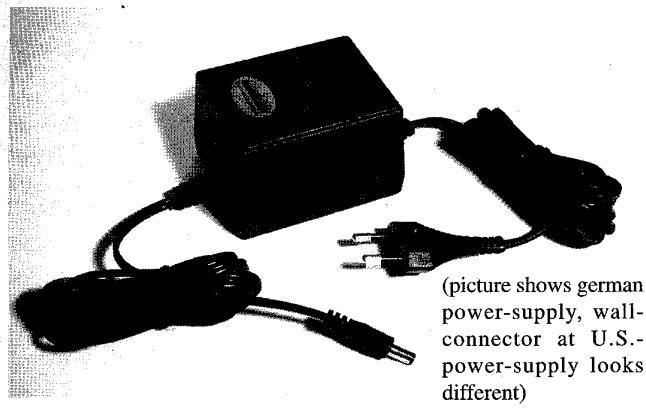
US Distributor: RADIKAL TECHNOLOGIES
1119 North Wilson Ave
Teaneck, NJ 07666
ph 201/836-7671
fx 201/836-0661



Downloaded from www.Manualslib.com manuals search engine

Attention:

Only use the power supply included with the unit. This power supply provides the 309 with enough current to ensure proper operation. Now proceed to the next chapter, "Connections".



(picture shows german power-supply, wall-connector at U.S.-power-supply looks different)

You will probably want to connect the 309's Audio outputs to a monitoring system, or you can use headphones.

Connections:

On the rear panel are jacks for connecting the 309 to the outside world. Two 1/4" jacks, the main stereo output, are labeled OUT 1 (LEFT/MONO) and OUT 2 (RIGHT). Use these jacks for connecting the 309 to a mixing board (recording studio) or an amplifier (live performance). Three 5-pin DIN jacks, the MIDI connections, are labeled MIDI IN, OUT and THRU. Use these jacks for connecting the 309 to other MIDI equipment. One last 1/4" jack, labeled FOOTSWITCH, is for connecting a footswitch - used for advancing Patterns, etc... .

1.) Connecting to a stereo monitoring system:

Using a 1/4" Male-RCA Male cable and with the 309 switched off, connect the 1/4"-Male plug into the 309's outputs. Plug the RCA plug into your stereo's inputs, such as:

1.) AUX or also Auxilliary
2.) LINE
3.) CD
4.) DAT
5.) TAPE IN or TAPE PLAY

2.) Connecting to a mixing board:

Same as above except use whatever plug type necessary to connect to the mixers LINE inputs.

3.) Headphones:

The Rave-O-Lution 309 also has a headphone output. Any headphones with an impedance equal to or greater than 32 Ohms can be used. Prolonged exposure to excessive sound levels can cause permenant hearing damage.

Getting Started

Initialization:

Sometimes it may be necessary to re-initialize the 309, such as, when the Buffer battery is replaced. The procedure is done as follows: With the power switched off, while pressing and holding the WRITE-button, turn the power on.
The Display shows the following:

```
Initialize All?
[ok]  [cancel]
```

Press the F1 key to confirm the Initialization procedure. Initialization clears the memory contents of the 309, therefore it is a good idea to backup your data to a computer or MIDI data recorder, using the Bulk Dump procedure, before initializing.

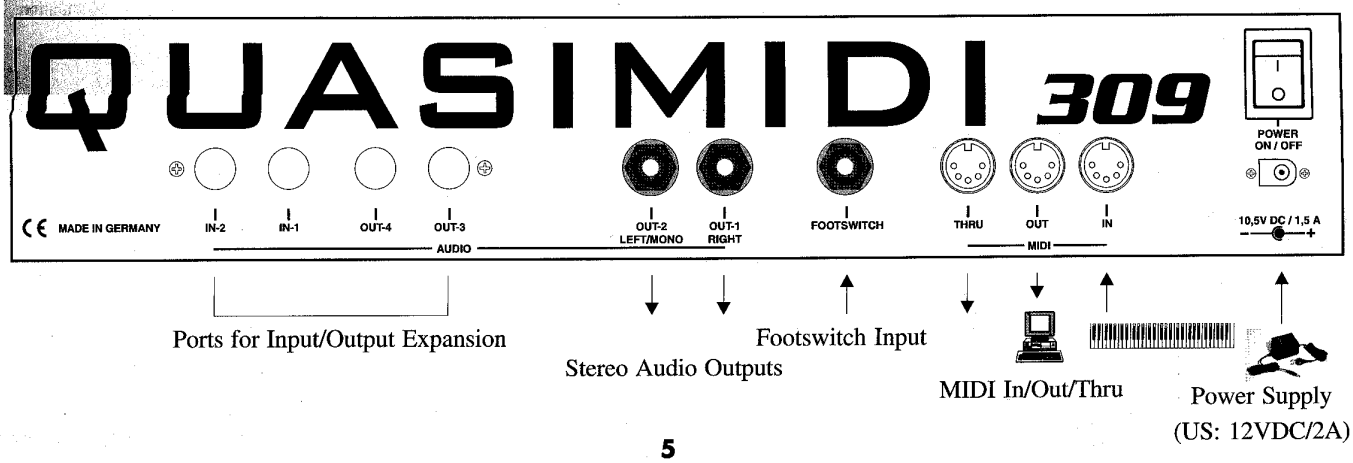
Turning the Knobs!

Before delving into the next chapter which gets into the actual Sound generation and architecture of the 309, you can enjoy a little instant gratification. The display shows the following:

```
1:Untitled_____
(STOP) Tempo:140
```

Pressing the PLAY-button starts playback of the 309 and you will be hearing Pattern P01. The MUTE-buttons are used to individually mute each instrument. The knobs associated with each instrument can be used to adjust the Sound in Realtime. The PATTERN Pads 1-8 and the SONG/PATTERNS keys < > are used to call up Patterns (altogether there are 100 Patterns at your disposal: 00-99).

Rear Panel of the RAVE-O-LUTION 309:



Downloaded from www.Manualslib.com manuals search engine

What is A.E.S. ?

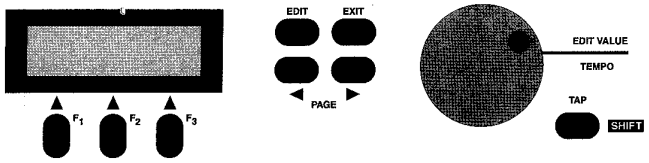
With the 309 you have acquired you a musical instrument, which uses a uniquely developed Sound generation method. Also, the BASS/LEAD Synthesizer section uses no samples! The Sound generation works similar to its' analog ancestors, on the basis of waveforms which are then filtered. This kind of Sound generation, otherwise known as subtractive synthesis, comes in the 309 in a newly developed algorithm:

ANALOG - EMULATION - SYNTHESIS (A.E.S.): The waveform models are addressed via each section's VCO (Virtual Controlled Oscillator) . The oscillator is then processed by the VCF (Virtual Controlled Filter). At this stage the tonal parameters are applied directly to the oscillator models. The sound is then sent to the VCA (Virtual Controlled Amplifier) where the volume and basic approach of the sound is controlled with a 4-stage Envelope Generator. Notes can also be processed with a velocity controlled Accent. By turning on the VCA Gate parameter, the Envelope Generator can be applied to the Filter. Any stage of the above synthesis chain can be modulated with the LFO (Low Frequency Oscillator). A.E.S. is a model of the synthesizer variables we have come to know and use. The virtual access is made to a true modeled analog chain of parameters.

An Overview of the 309:

The 309 contains five different, independent Tone Generator-sections, 3 Effect - Processors and a powerful Pattern based Sequen-cer with a 16 song memory.

The Instruments-sections are made up of five independent Synthesizers in a single case. Each Drum section contains its' own 24 dB/Oct filters with Resonance and ADSR-Envelope generator. The instrument to be edited (via the software menu) is selected directly in the according instrument section:



All Front panel knobs transmit Continuous Controllers which are sent out the MIDI-Out jack, and can be recorded on an external computer-sequencer. For example, turning the Filter Cutoff- control in the BASS-section slowly clockwise (opening the filter), sends CC 16. The reverse is also possible: MIDI Controllers received at the MIDI input are pre-assigned to the according front panel controls.

A look at the individual sections:

Below is an overview of the Sound-parameters:

In all instrument sections there are an equal number of sound editing possibilities available. Additionally, the BASS/LEAD Synthesizer section contains a LFO (Low Frequency Oscillator) with according parameters and also a Glide control. Notes played 'legato' (held) exhibit the greatest Glide effect, from one note to the next. This effect is only noticeable on 'pitched' notes, and therefore is not very effective on drum hits, unless the sound has a long decay, such as, "AnaKick-1" to "AnaKick-4".

Of further interest is the Percussion-set section (see p.12).

The Mix-parameters affect Sounds in stored Pattern (see following page).

AVAILABLE SOUND PARAMETERS

Parameters available for individual instrument sections. ** indicates knob-dedicated parameters*

KICK DRUM	SNARE DRUM	HIHAT	PERC Set	BASS/LEAD
*Instrument (Waveform)	*Instrument (Waveform)	*Instrument (Waveform)	*Perc Set Nr.	*Wave (Oscillator Model)
Level	Level	Level	Level	Level
VCF Drive	VCF Drive	VCF Drive	VCF Drive	VCF Drive
Cutoff Frequency	*Cutoff Frequency (Tone)	Cutoff Frequency	*Cutoff Frequency (Tone)	*Cutoff Frequency
Resonance	Resonance	Resonance	Resonance	*Resonance
Envelope Modulation	Envelope Modulation	Envelope Modulation	Envelope Modulation	*Envelope Modulation
Dynamic Modulation	Dynamic Modulation	Dynamic Modulation	Dynamic Modulation	Dynamic Modulation
Accent	Accent	Accent	Accent	*Accent
*EG Attack	EG Attack	EG Attack	EG Attack	*EG Attack
*EG Decay	*EG Decay	*EG Decay	*EG Decay	*EG Decay
EG Sustain	EG Sustain	EG Sustain		*EG Sustain
EG Release	EG Release	EG Release		EG Release
VCA Gate	VCA Gate	VCA Gate		*VCA Gate
*Tune	*Tune	*Tune		Tune
				*Glide
				LFO Waveform
				LFO Rate
				LFO Depth
				LFO>VCO
				LFO>VCF
				LFO>VCA
				Hold Pedal

Downloaded from www.Manualslib.com manuals search engine

MIX PARAMETERS

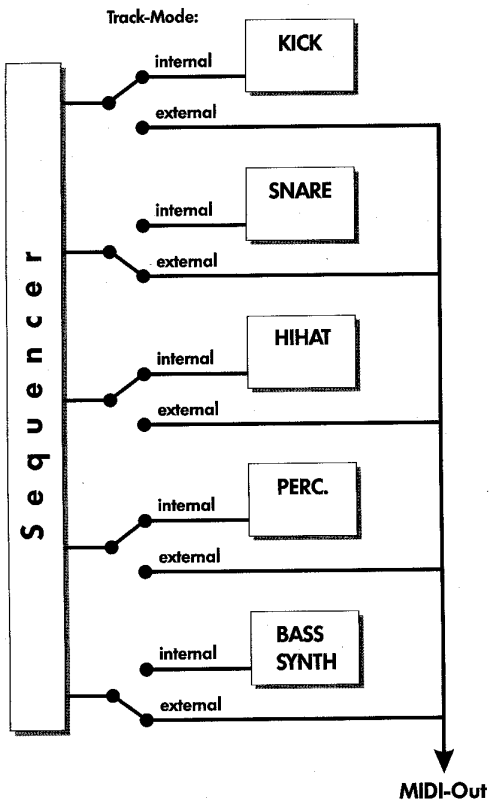
Parameters available for individual instrument sections. ** indicates knob-dedicated parameters*

KICK DRUM	SNARE DRUM	HIHAT	PERC Set	BASS/LEAD
*Sound Program Nr	*Sound Program Nr	*Sound Program Nr	*Sound Program Nr	*Sound Program Nr
*MIX Level	*MIX Level	*MIX Level	*MIX Level	*MIX Level
Panorama	Panorama	Panorama	Panorama	Panorama
FX-1 Send	FX-1 Send	FX-1 Send	FX-1 Send	FX-1 Send
FX-2 Send	FX-2 Send	FX-2 Send	FX-2 Send	FX-2 Send
Track Mode	Track Mode	Track Mode	Track Mode	Track Mode

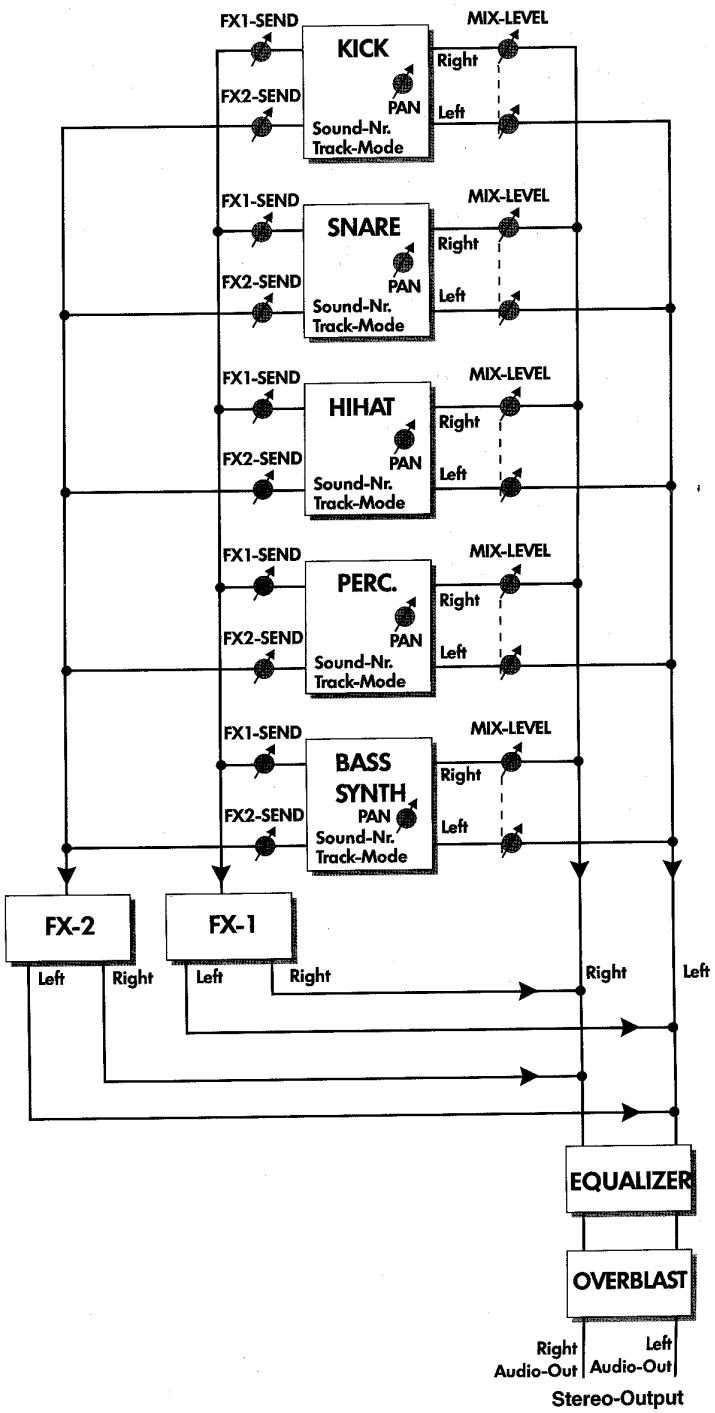
The MIX-Parameters:

Access the Mix-parameters by first pressing the EDIT button and subsequently pressing the F3 button. Select an instrument for editing by pressing the according SELECT button. Editable parameters include: Sound number, Mix level, Panorama, Fx1 Send, Fx2 Send and the Trackmode. The parameters for Fx1 Send and Fx2 Send determine the amount of original-signal both FX1 and FX2 process. The Trackmode determines whether the selected instruments' track controls the internal sound-system, or external - via MIDI.

Internal Signal Flow of the TRACK-MODE:



Internal Signal Flow of the MIX section:

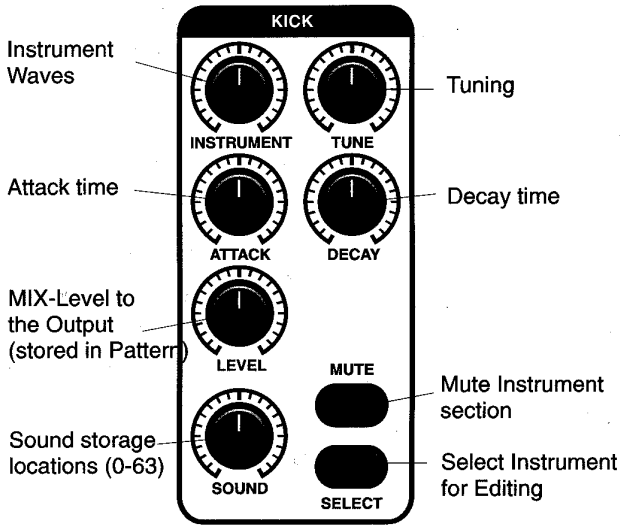


The following graphic shows the individual sections and their Audio signal routings:

Downloaded from www.Manualslib.com manuals search engine

Sound Programming:

The KICK-Drum Section:



Push the PLAY button and SELECT button of the Kick Drum section and you will now hear a complete Pattern. If you now press the MUTE button in the other sections, you will hear the Kick Drum as a solo track.

```
1:Untitled  ▮----
(P01)  Tempo:140
```

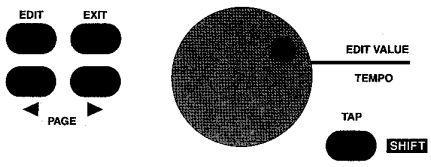
Now press the EDIT button and you will see the following menu:

```
Select Edit   |1>
 [Sound]   [Mix]
```

Select sounds via button F1. The first of the submenus give you the ability to select the Kick Drum source of your choice. There are 26 different Kick Drum Waves to choose from.

```
Edit  Kick-Sound
|1> Ins:909Kick2
```

If you turn the EDIT VALUE wheel you will now be able to preview the different Kicks and make your selection. You may also advance through the sounds with the 'WAVE'knob in the Kick-section. Now advance to menu 2 by pressing the right PAGE button.



You will see the following menu in the display:

```
Edit Kick-Sound
<2> Level:   127
```

On menu page 2 you are able to adjust the individual level for that sound. You will be able to store the sound edits in any of the 64 memory locations.

Attention: The level in the Kick section is for Mix Level, and is stored only in the Pattern.

Press the right page button to menu page 3.

```
Edit Kick-Sound
<3> VCFDrive:98
```

The next menu you advance to after pressing the right PAGE button is menu 3 and is unique to the Rave-O-Lution 309. It is the VCF drive. Unlike other instruments, the Overdrive is physically placed before the filter not at the output stage. Each of the individual instruments have their own Overdrive distortion parameter. This makes it possible to create the kind of distortion we associate with 'Acid' music.

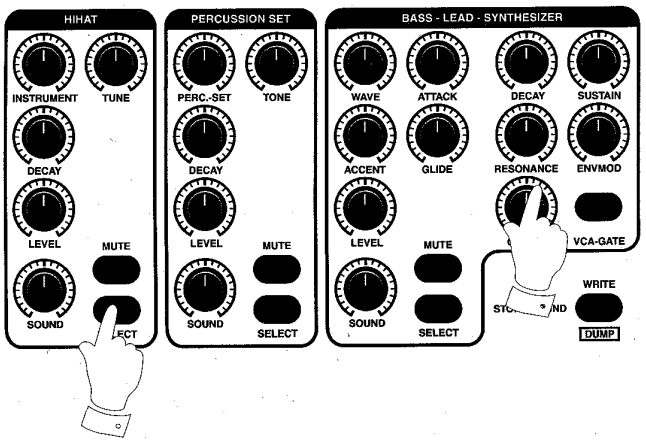
Each 309 section has its' own totally variable 24 db per octave, 4 pole, low pass filter, with resonance. These may be accessed externally by MIDI controllers 16 and 17, or internally by turning the knobs in each section. A filter envelope assignment allows for further tailoring of how the filter reacts over time.

```
Edit Kick-Sound
<4> CutFreq: 127
```

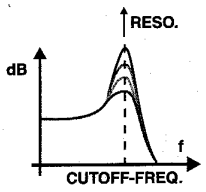
If you hold the SELECT button down while you are in the Edit mode in the Kick section and turn the CUTOFF and or RESONANCE knobs in the Bass/Lead synthesizer section you will hear those changes accessing the filter and resonance in the Kick drum synthesizer section.
It is also possible to address and assign any Bass/Lead parameter to any other section by holding the appropriate SELECT switch down in the instrument section you wish to edit. This gives you 8 extra real time pots at the touch of a button. Each move you make can be instantly viewed in the Edit window. Changing the Resonance amount basically adjusts the Resonance Peak of the Filter.

```
Edit Kick-Sound
<5> Resonance: 100
```


Downloaded from www.Manualslib.com manuals search engine



The amplitude in relationship to the frequency:



Overdriving the resonance of the filter can lead to self modulation. From typical whistling filter sounds, to subtle wow effects and beyond - are easily obtained in any of the 5 synthesizer sections.

How strongly the Envelope Generator effects the filter can be seen in menu page 6 via the envelope modulation parameter.

```
Edit  Kick-Sound
<6> EnvMod:    0
```

In menu page 7 you can set the degree to which key velocity controls the filter, affecting the sound's color. In short, velocity can be routed to the filter.

```
Edit  Kick-Sound
<7> DynMod:    0
```

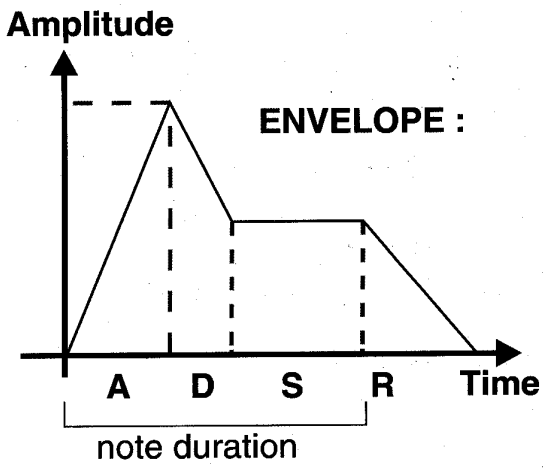
Pressing the right page button will now advance to menu page 8, which allows you to control a note's accent.

```
Edit  Kick-Sound
<8> Accent:    0
```

This determines how strong a note will be in volume and tone color. You are able to assign up to 4 graduated velocities to each event via buttons 9 through 12. These may be assigned in either the Drumgrid or Step-sequencer mode. Depending on which velocity levels you choose you can also use these buttons to control filter dynamics. If you assign accents to your work you will be able to highlight their effectiveness in real time via the ACCENT value pot in each of the 5 sections. In the middle position, 64, accents are most effective.

Menus pages 9 through 13 pertain to the ADSRs, applicable to both the filters and the VCA's. Also, there is a parameter for the VCA gate. Changes can be preprogrammed or automated after the fact.

The following graphic example shows how a slow step in level can be applied to an envelope via a simple turn of the knob.



The Sound reaches its maximum level immediately upon pressing the key and the level drops to zero immediately upon releasing the key, when using the VCA Gate.

What happens if the VCA is driven by the curve of the envelope?

When you turn off the VCA-GATE function of the synthesizer section the Envelope becomes active. During the Attack phase, the volume and filter increase to maximum level.
The second stage of the envelope is the Decay time. During this phase, the sound diminishes to a set minimum point and transitions into the third level, Sustain. During this phase, the sound reaches a steady state of maintenence, for as long as the note is held on. The final phase is the Release time, in which the sound may carry on even after the trigger switch or note is released.
This is very useful, for example, in giving an 808 bass drum its expanded tonality after its initial impact when you have given the switch a minimal tap during real time recording.

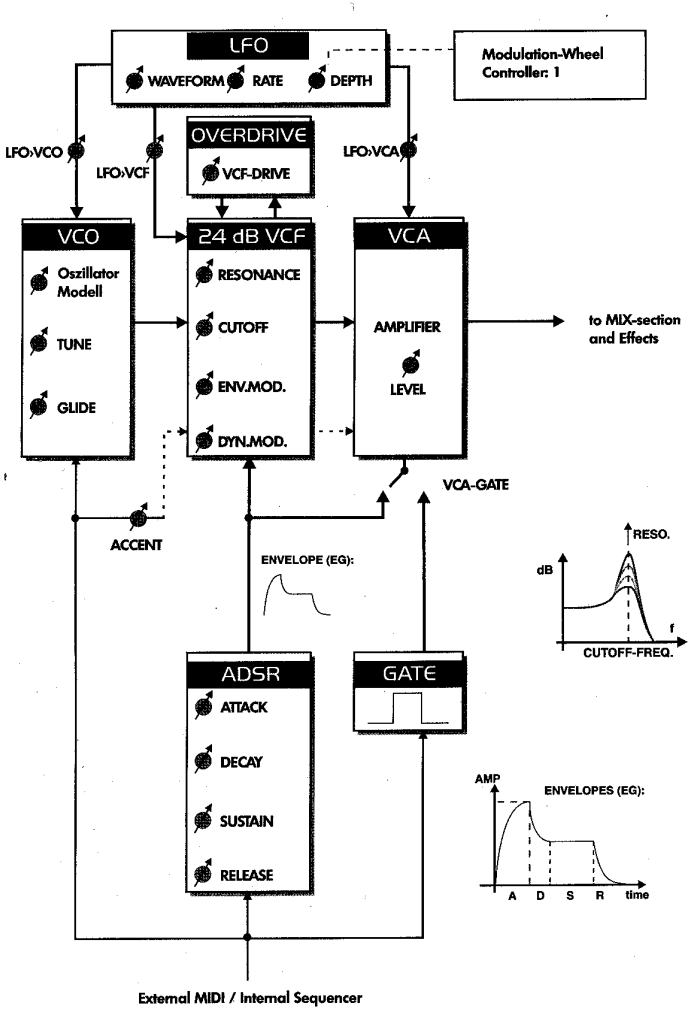
In addition, the ADSR affects the filter simultaneously. You have the possibility to assign the VCA gate and leave the ADSR to work with the filter only. With the gate envelope you have in principal an ADSR, but the ADR times are defaulted to 0. The sound in that case immediately reaches its' level when a switch is triggered. This parameter is available in the KICK, SNARE, HIHAT and BASS/LEAD sections.

Downloaded from www.Manualslib.com manuals search engine

The last menu page of the Kick Sound Edit section contains the Tune parameter for the selected tone.

```
EDIT  Kick-Sound
<14| Tune:   -4
```

Signal flow and Parameters of the BASS/LEAD SYNTHESIZER section:



How to Store a Sound:

Once you have created a new sound, it can be stored for recall at a later time. Press the WRITE button and advance by the right page button to menu page 1.

```
|1> Store Kick?
[ok]
```

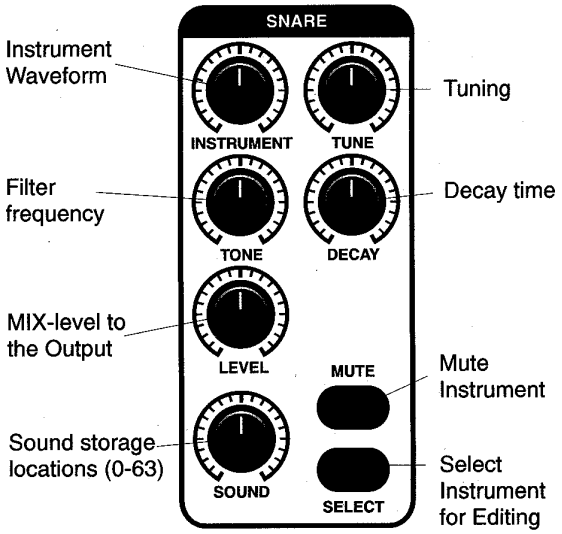
Confirm with the Fl switch and you arrive at the following:

```
to Kick-Snd 0
[ok]  [cancel]
```

Select a storage location using the EDIT-VALUE Wheel and confirm by pressing Fl. You can leave the Write menu by pressing EXIT.

The SNARE Section:

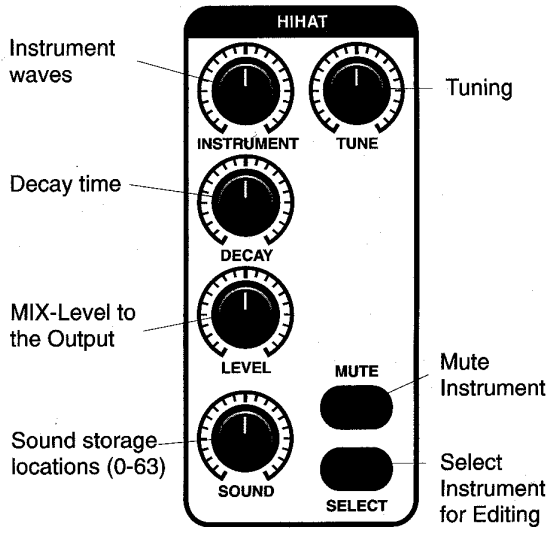
The Snare section contains, on menu page 1, 25 basic instruments to choose from. The remaining corresponding sections are the same as those found in the Kick drum section. All Snare sounds can be addressed by the Synthesizer parameters giving the user complete tonal variance. There are 64 memory locations to store user Edits, allowing you to customize your sounds.



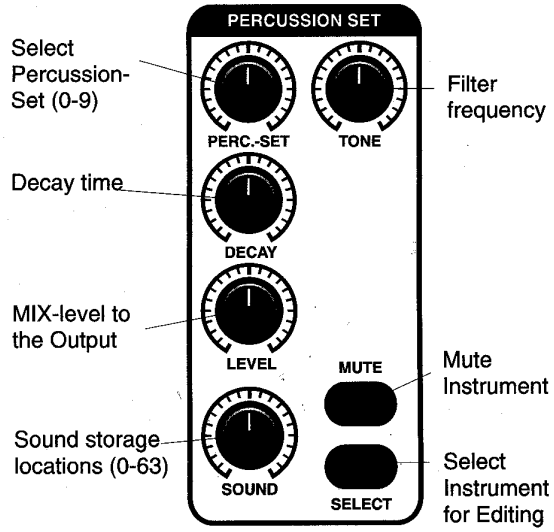
Downloaded from www.Manualslib.com manuals search engine

The HIHAT section:

The HiHat section contains 7 basic instrument sets to choose from. This section has 2 voices and is thus termed duophonic.
Both Open and Closed HiHats can be accessed independently. This section also has 64 memory locations for storing Edits. The parameters correspond to those of the Kick drum section.



The PERCUSSION SET:

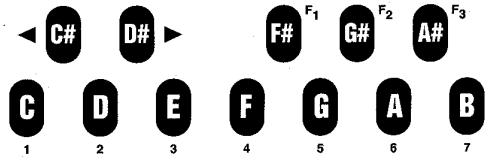


The Percussion section in the 309 has its own map. It has 12 polyphonic voices. You can create up to 10 sets made up of 12 instrument groups. There are 128 different instruments to choose from. They may each be Edited and stored independently with the following parameters: Tune, Instrument select, Panning, FX1 and FX2.

Select the Percussion section by hitting the SELECT button. Press the EDIT button and then F2. The display shows the following:

```
Edit Set  3 -  C
|1> Ins:808Kic1F
```

In the top line you can select a set. The letter on the top line shows the button on which the instrument is stored. In this example you have an 808 kick stored on button C. To select a different sound, turn the EDIT VALUE wheel.



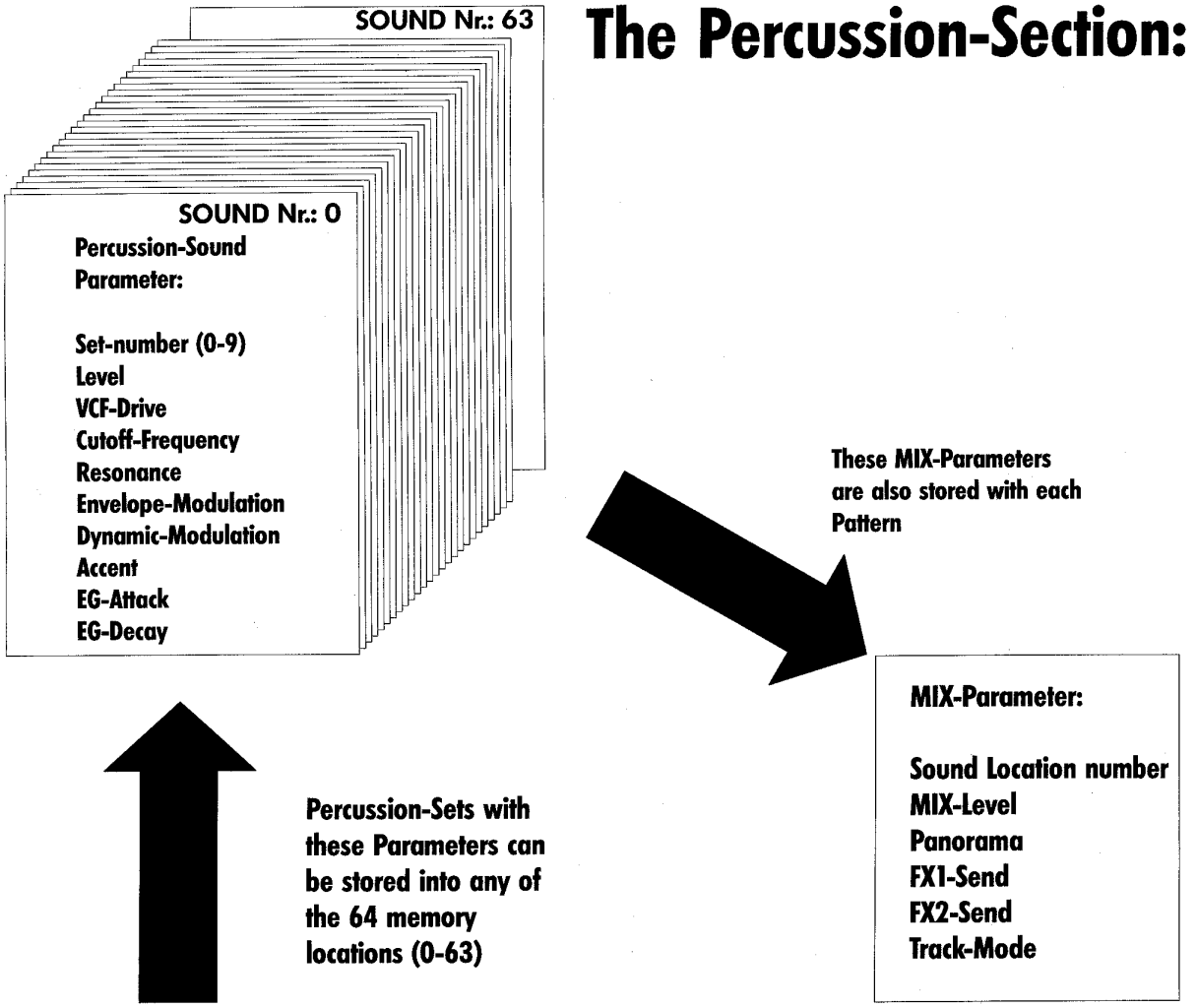
Use the page button to select subsequent menu pages. By pressing Exit, you will return to the initial menu page.

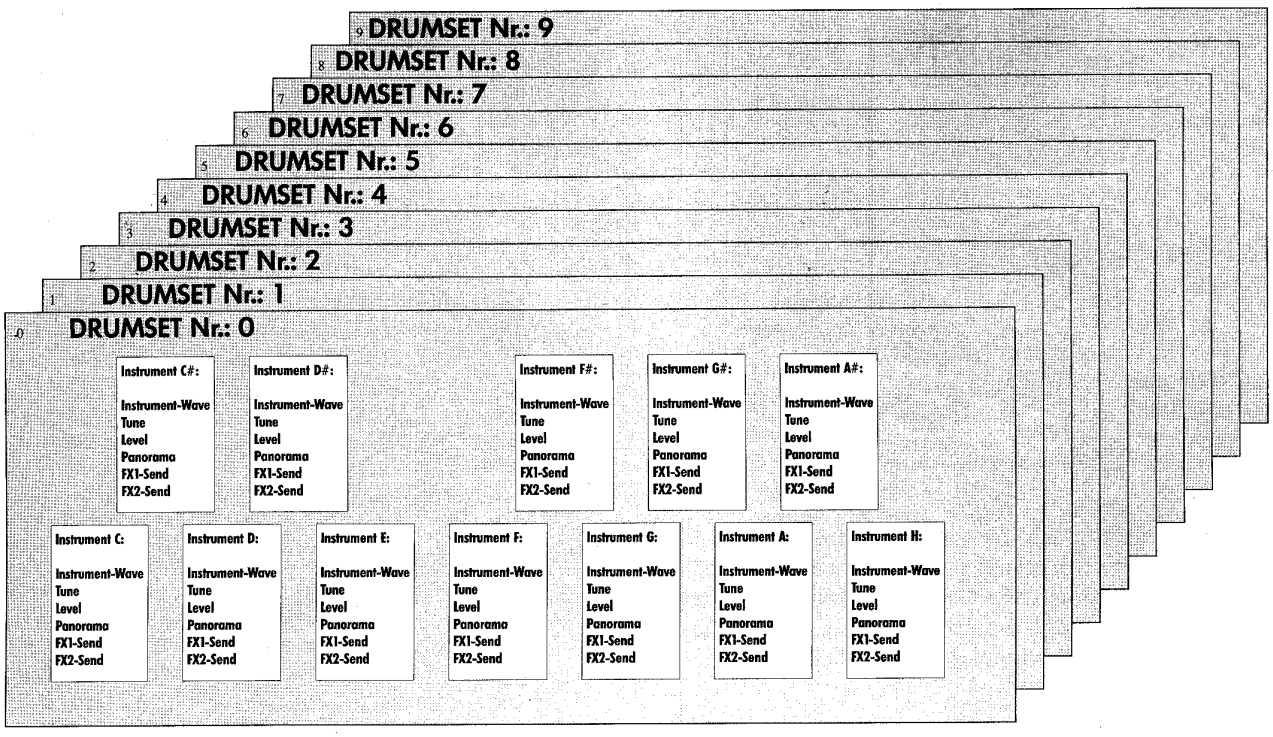
```
Select Edit  |1>
[Snd][Set] [Mix]
```

The Percussion section also has 64 memory locations for storing user Edits. Any of the 10 sets, along with the various edited parameters can be stored. As the following shows there are 10 parameters available to the user.

Downloaded from www.Manualslib.com manuals search engine

The Percussion-Section:

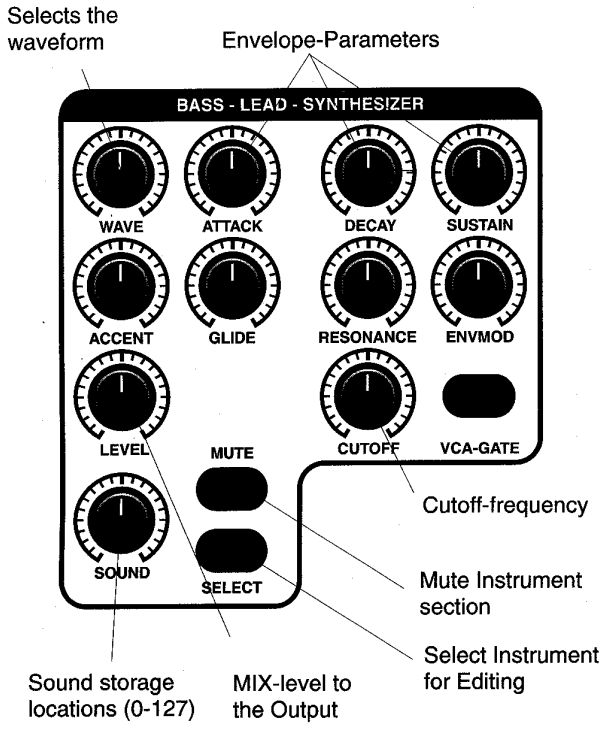




Downloaded from www.Manualslib.com manuals search engine

The BASS/LEAD SYNTHESIZER Section:

This section contains a monophonic synthesizer. It has the same parameters as the other sections but also contains a Modulation section (LFO) and Glide parameters. The synthesizer section contains 28 waveform models including standards, such as, Saw, Square, Triangle, and Pulse, along with some sophisticated dual oscillator models. Dual oscillator models are labelled with a "2" in the Waves name.
See real time access pots and buttons below.



The parameter definitions of the first 14 menu pages are the same as the Kick section. Parameters unique to the Bass/Lead section begin on menu page 15. This page contains the Glide parameter.

```
Edit Bass-Sound
<15> Glide:    0
```

With legato, notes played in succession will mesh into one another, that is, the pitch of note 1 will 'glide' to the pitch of note 2 without any discrete steps. This is particularly effective for many "Acid" lines.

The LFO:

On menu pages 16 - 18, you can adjust the LFO's Waveforms, the Rate and Depth of the modulation.

```
Edit Bass-Sound
<16> LFOWave: SIN
```

Menu pages 19 - 21 contains parameters for selecting the LFO Routing. Settings can be made for how much LFO is routed to each; the VCO, theVCF and the VCA.

- VCO affects Pitch
- VCA affects Amplitude
- VCF affects the Filter, in regards to Modulation.

The EFFECTS Section:

The 309 has three Effects sections, FX-1, FX-2 and FX-3. FX-1 is made up of Reverb emulation algorithms. FX-2 deals with Modulation effects, ranging from Chorus and Flange algorithms to those of Delays, and beyond. FX-3 is a two band Parametric Equalizer. Its' effect is global and routed to the outputs. In the MIX menu you can vary the amount of 'effect' to be applied to each Drum or Synth voice via the FX send parameter.
An example of effects usage can be easily demonstrated by applying Chorus to a Bass/Lead sound, which is excellent for thickening the Voice.

- Printed on the right side of the 309's faceplate is a listing of the available Effects.

ATTENTION:
The Effects settings are only stored within the Song. The unstored Effects remain after the machine is turned off. They are lost if a different Song is selected before storing the settings.

TIP:
If you do not intend to program Song Patterns, you may want to use available memory locations to store Effects setups. This would apply if the 309 were being used as an expansion tone module.

The effects section is located in the Edit menu. Press the EDIT button and scroll to menu page 3 using the right PAGE button:

```
Select Edit  <3>
[FX1] [FX2] [EQ]
```

Pressing F1 opens FX-1, the Reverb section; pressing F2 opens FX-2, the Modulation section; and pressing F3 opens FX-3, the Parametric EQ.

The OVERBLAST:

With the 'Overblast' control you have additional tonal possibilities as you can now do a linear addition to the bass tone range, or Bass-Boost. Similar to a contour control, it provides for excellent projection in live performance. (Take care of your speakers)

Downloaded from www.Manualslib.com manuals search engine

The Sequencer:

Connection to a MIDI Keyboard:

The Rave-O-Lution 309 can be connected to an external keyboard for added convenience, such as programming velocities. This is especially good when you intend to do real time recording in which you need more than 1 octave of range. If you want to address more than 1 MIDI channel simultaneously you must use a keyboard capable of multiple zone operation, such as QUASIMIDI CYBER-6. Connect the MIDI Out of the keyboard to the MIDI In on the 309. On the keyboard select MIDI transmit channels to match the MIDI channels on the 309 and you are ready to go. Factory settings are as follows:

System-Channel: 1 (found in the System Edit menu):

MIDI-Channel 1: Kick
MIDI-Channel 2: Snare
MIDI-Channel 3: Hihat
MIDI-Channel 4: Percussion
MIDI-Channel 5: Bass-Lead-Synthesizer

System-Channel: 2 :

MIDI-Channel 2: Kick
MIDI-Channel 3: Snare
MIDI-Channel 4: Hihat
MIDI-Channel 5: Percussion
MIDI-Channel 6: Bass-Lead-Synthesizer

System-Channel: 3 :

MIDI-Channel 3: Kick
MIDI-Channel 4: Snare
MIDI-Channel 5: Hihat
MIDI-Channel 6: Percussion
MIDI-Channel 7: Bass-Lead-Synthesizer

... and so on.

The following is the hierarchy of the sequencer levels.

1) Motif:

The Motif is the smallest unit of programming in the sequencer. It can be made of from 1 to 8 bars. Each instrument section (Kick, Snare, Hihat, Percussion and Bass/Lead) has the ability to have its' own motif with independent lengths. A motif can also be used as a special loop track.

2) Pattern:

The next level in the 309's sequencer is the Pattern. Each Pattern is made of up to 5 motifs. The Pattern is really the layering of different small sequences. If the Pattern has 1 Motif which is 8 bars long and the rest of the 4 parts range from 1 to less than 8 bars the subsequent smaller tracks will loop until the 8 bar mofif cycles through. The 309 comes with 100 pre-programmed patterns.

3) The Song:

The Song is an arrangement of Patterns in individual steps. Each Song can contain up to 99 steps and each step may be up to 64 bars in length. Determining which Patterns go into which step and which instruments should be active can be specified. Additionally, the Root Pitch of the Bass/Lead track can be programmed.

Programming Drum Grooves:

Press the Record button. The following section will be displayed:

```
Select Record...
[Master] [Patt.]
```

Select F3, [Patt]. This is the Edit pattern menu, which contains the basic sequencer functions. Here you can generate your own Motifs, or recombine already existing ones.

-The Select button

During recording, the Select button plays an important role - it determines which instrument you are about to record.

The first page of the menu selects the Motif you are going to work in. You may choose between ROM and User Motifs. Use the Edit value wheel to scroll between ROM Motifs and empty User Motifs. Empty User Motifs are marked with an asterisk. In this mode you may randomly select Motifs.

```
Edit P01 T: Kick
|1> Motif:USR*01
```

Tip: Holding the Shift button while hitting Select on the desired instrument advances through different randomly selected Patterns. Pressing Shift-Select again advances to a new Motif.

The right and left Page buttons advance through the Edit menu parameters. Menu page 2 contains the Groove parameters.

```
Edit P01 T: Kick
<2> Groove:   0%
```

Here you assign a shuffle feel to the rhythm, in which individual events are offset. This is useful for avoiding a 'quantized-rigid feel' in a Pattern with a more fluid swing feel. It is especially valuable in House, Hip-Hop and Funk musical styles.

Menu page 3 contains the [clear] parameter, which erases the contents of the Motif.
When using an empty User Motif, you have the option on this page to select the number of bars between 1 and 8:

```
EDIT P01 T: Kick
   <3> [clear]
```

then ...

```
Edit P01 T: Kick
<3> [ --- ]Len:1
```


Downloaded from www.Manualslib.com manuals search engine

Pressing the right Page button opens the 'drumgrid'.

```
Edit P01 T: Kick
 <4> [drumgrid]
```

Programming Drum Grooves with the Drumgrid:

Before programming Drum Grooves, select an empty User Motif for all instrument sections.
A slightly more elegant solution to create an empty Pattern is contained in the WRITE menu. Press WRITE, then press the right PAGE button to select menu Page 5. You should see the following:

```
<5> Init Patt.?
[ok]
```

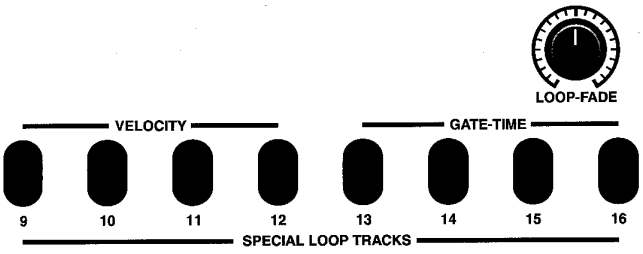
Confirm the Init Pattern? with [ok], the F1 button. You now have created a Pattern that contains no Motifs. Press EXIT to leave the Write menu.

The SELECT button allows you to choose an instrument which you would like to use for your Drumgrid recording. In this example, we will start with the Kick track. Hit F2 to open the Drumgroove.

```
Grid: 16 | 1/1 |
 Instr:     Kick
```

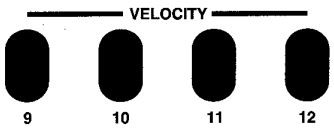
You should now hear the Metronome only.

In this menu the LOOP-FADE control controls the Metronome volume.



Input notes by pressing buttons 1-16. These are equal to 1 bar in default resolution. There is a 4 beat count off. Experiment by pressing buttons and listening to the results. When a button is lit, it indicates that a Drum voice will sound when that step is triggered. Pressing the button a second time removes the Drum voice and extinguishes the light.

Notes programmed using the Drumgrid can be entered at one of four velocity levels, selected on buttons 9-12. To change the velocity, hold down SHIFT and buttons 9-12 will light. (9 is the softest, 12 is the loudest.)



Changing velocity only affects notes played after the change. If you want the velocity change to affect existing notes you must erase that note re-enter it.

If the length of a new Motif goes past a bar line you can use the page button to advance to the next bar. Each bar may be worked with independently.

```
Grid: 16 | 1/2 >
Instr:     Kick
```

then ...

```
Grid: 16 < 2/2 |
Instr:     Kick
```

Additionally, in the drumgrid the resolution of note patterns can be changed. During the inputting of notes, hold down the SHIFT button and select different note resolutions with the Page buttons. Resolutions of 1/8th, 1/12th(triplet), 1/16th, 1/24th, to 1/32nd notes are available. In the last mode for example, 16 notes equals ½ of a bar.
You may find the best way to use these note values is by experimenting. For instruments like the Kick drum, lower resolutions are usually sufficient. Snare and HiHat generally demand a higher resolution because of rolls and other subtleties.
To leave the Kick Motif, hit the exit button. Press SELECT on the next instrument for Editing.

The HiHat has two different sections, corresponding to Open and Closed HiHats available. Use the EDIT VALUE wheel to toggle between these two instruments.

The Percussion section gives the option to choose between 12 different instruments. In the Drumgrid, you may distribute these 12 voices across the first 12 key buttons. Select Percussion instruments using the Edit value wheel.

Important: After you have completed your drumgrid hit EXIT. Choose the appropriate drums and basses. Be shure to hit the WRITE button to make your selected sounds a permanent part of this pattern.

Now on to Edit Pattern menu page 5. As mentioned earlier, the metronome volume can be adjusted with the LOOP-FADE knob; here is where the metronome is turned on or off.

```
Edit P01 T: Kick
<5> Metronom: ON
```

Press the right PAGE button to menu page 6. Here you can enter the notes into the 309 in Realtime.

```
Edit P01 T: Kick
<6> [record]:NEW
```


Downloaded from www.Manualslib.com manuals search engine

This record mode functions basically like a tape recorder. Push the REC button and after a 4 beat count off, recording starts. You can now record a rhythm, or a melody with the Bass/Lead synth, directly with the keys. The length of the recording is based on the Motif length, set in the Drumgrid menu.

When set to [new], old data is erased before recording new data. When set to [dub], old data is retained while new data is recorded over top of the old data.

```
Edit P01 T: Kick
<6> [record]:DUB
```

Example: Record a HiHat Motif with the Drumgrid or in Real-time, making sure to select the [dub] setting with the EDIT VALUE wheel. Start recording again and, after the 4 beat countoff, rotate the Tune knob in the HiHat section. When finished recording, press PLAY and you will hear the newly recorded HiHat superimposed on the original HiHat Motif. The next page, menu page 7, contains Quantization parameters:

```
Edit P01 T: Kick
 <7> [quant]:16
```

Quantizing should be used when the timing of a Real-time performance is not precise enough. Pressing the F2 button aligns the recording to the selected time resolution.
The following note resolutions are available via the Edit wheel:
1/8th, 1/12th(triplet), 1/16th, 1/24th, 1/32nd

note: Quantizing won't help you if you do not use a reference clock, or if you have no talent. A certain amount of precision is required.

If, after quantizing, you are not satisfyed with the results, it is possible to undo the quantization on menu page 8.

```
Edit P01 T: Kick
<8> [delc][undo]
```

Pressing the F2 button, [delc], erases the tracks' Controller data. Pressing the F3 button, [undo], un-does the last thing you did.

Menu page 9 is the last page in the Edit Pattern menu. It contains a 'Memory Gauge', indicating a percentage of how much memory for storing edits is left in the 309.

```
Edit P01 T: Kick
<9| Mem:100%free
```

Using the STEP Sequencer with the BASS/LEAD SYNTHESIZER:

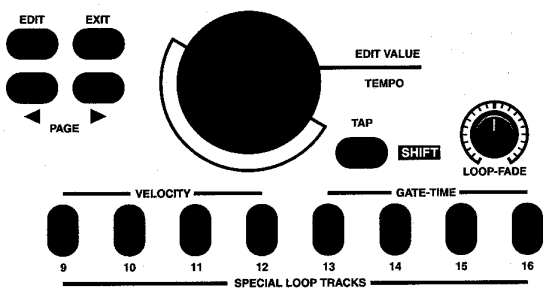
The Step Sequencer is to the Bass/Lead synthesizer as the drumgrid is to the Drum voices. Enter the Step Sequencer by pressing the Bass/Lead Select button when within menu page 4.

```
Edit P01 T: Bass
<4> [stepRecord]
```

The Step Sequencer is oriented very much like that found in the TB-303 Bassline and MC-202 Microcomposer, from Roland, which hit the market in the early 80's and have virtually nothing in common with any similarly named products of today.

The basis for the first sequence is an empty Bass Motif. Pressing the F2 button opens the Sequencer. The display shows the following: If the Sequencer is not running, press the PLAY button. Now press F2 to enter the Step Sequencer.

```
Step:   1/16
---  V: 64 G:  2
```



Enter Notes with the small Note keys and press the PAGE button to advance to the next note.

```
Step:   1/16
C4  V: 64 G:  2
```

The first step is shown in the display:

```
Step:   2/16
---  V: 64 G:  2
```

The Step Sequencer allows each Note to be entered at a different resolution. Hold down SHIFT and press the PAGE button to select the desired resolution. The available resolutions are: 1/8th, 1/12th(triplet), 1/16th, 1/24th, to 1/32nd notes.

Downloaded from www.Manualslib.com manuals search engine

The Pitches of the Notes:

The pitch value of the notes can be changed at any time, by using the EDIT VALUE wheel. To do octave transpositions, hold the SHIFT button down and simultaneously press the SONG PATTERN buttons. Right button=up, Left button=down. In the basic setting you are in the lowest register. Thus, only upwards transposition is possible.

Programming the ACCENT:

Programming the Accent is done via buttons 9-12. There is a choice of four dynamic levels (velocity). The value currently selected is shown in the display, via the F2 button. Depending on the Bass/ Lead sound chosen, it might also be possible to use velocity to open and close the Filters. Upon playback, these dynamic inputs will result in audible accents. You can use the ACCENT knob to heighten the effect in real time. In the middle location (64) the effect is the greatest, while rotating the knob left and right decreases the accent amount proportionally.

GATE and GLIDE:

The term 'Gate' in electronic music means duration. Specifically, in this case, *note* duration. The length of each note is determined using the four gate buttons (13-16). These durations range from very short to very long in 4 increments. The Gate can be different for each. Button 13 = short duration, Button 16 = long duration. At 16 it will be tied to the subsequent note, or 100% legato. The word 'Glide' means that one note transitions into the next note without steps in pitch. Realtime Glide movement is done via the front panel knob.

Storing a Pattern:

Once you have finished your Pattern you might want to store it. Before storing the Pattern you must leave the Step Sequence/ Drumgrid by hitting the EXIT button. Enter the Write menu by pressing the WRITE button. Select menu page 2.

```
<2> Store Patt.?
[ok]
```

Push [ok] to store. Now you will see ...

```
to Pattern P01
[ok]  [cancel]
```

On this page, select the storage space for the Pattern with the Edit value wheel. Choosing [cancel] aborts the entire process, the Pattern is not stored. Once you have found an acceptable storage space, press [ok] and the Pattern will be stored in the selected location. Leave the Write menu by pressing the EXIT button. After leaving the Edit Pattern menu, we will now enter the Edit Song menu.

Using Patterns to Create a Song:

A Song in the 309 is made up of sequence of organized Patterns. These could be preset ROM Patterns or User generated Patterns. A Song can consist of up to 100 song steps. For each of these steps you can define the following parameters:

1 number of Patterns
2 Pitch and Transpositions
3 number of bars per Pattern
4 muting of Motifs

To open the Edit Song menu, press the EDIT button.

```
Select Edit  <2>
[Pattern] [Song]
```

Now press F3, [song], and the display will show the following:

```
Edit S1  Bar:  1
 |1> Pattern: 1
```

These and all the following pages of the menu contain upper line information pertaining to the current position in the Song.

`Edit S1` - *indicates the first song step*
`Bar: 1` - *indicates the first bar*

By pressing the right page button you will advance to page 2 in the display.

```
Edit S1  Bar:  1
<2> Transp:   +0
```

Menu page 2 contains Transposition info as it applies to the Bass/ Lead synth.

```
Edit S1  Bar:  1
<3> Bars:      4
```

Menu page 3 determines the number of bars in the Pattern, from 1 to 64.

```
Edit S1  Bar:  1
<4> [ins] [del]
```

Menu page 4 contains the [insert] and delete] functions. When you press the F2 button, the actual step is copied and subsequent steps advance one position further.

Note- this function does not work on the last step of the Song.

When you press F3 the current Song step is erased and subsequent steps are moved back in time by one position.

ATTENTION: The last step cannot be erased.

Downloaded from www.Manualslib.com manuals search engine

Menu page 5 in the Edit Song menu pertains to the [copy] function.

```
Edit S1  Bar:  1
<5| [copy]to:S1
```

When you press the F2 button the current step is copied. Select the destination step with the EDIT VALUE wheel. To MUTE individual instrument sections in a step, press the appropriate MUTE button. When the button lights, the section is muted. Once the step is acceptable, press the right PAGE button to advance to the next step. The left PAGE button moves the sequence one step back.

Storing a Song:

Once the Song steps are assembled, you are ready to store the Song. Select menu page 3 with the page button. Press the WRITE button and press [ok] to store.

```
<3> Store Song?
 [ok]
```

Press [ok] to store.

```
Name: Untitled
 [ok]  [cancel]
```

On this page, you can name the Song. Change the letters using the EDIT VALUE wheel. Advance to the next letter with the right PAGE button. [cancel] stops the process.

```
to 1  (Untitled)
 [ok]  [cancel]
```

Once the name is input, press [ok]. A prompt will appear confirming if you really want to erase the current storage area with the new Song. Scroll to select an unused storage location with the EDIT VALUE wheel.
You can leave the WRITE menu by pressing the EXIT button.

The MASTER TRACK:

The Master Track is an additional Sequencer track on which you can store Realtime control data, after the Song is assembled. All control surface movements can be recorded on this track. Additionally all of the realtime movements can be made within the pattern with the overdub recording option. To record the Master Track, first press the RECORD button. You will see the following menu:

```
Select Record...
[Master] [Patt.]
```

Press [Master]

```
Edit Mastertrack
|1> [record]:NEW
```

Once [record] is pressed, recording of the Master Track starts. Every button pressed and knob moved is stored in memory, in Realtime. Every move! To stop the recording, press STOP.

ATTENTION: When you finish recording a Master Track, the display may say, "working ... ". This could take several minutes, depending on the amount of new moves being merged with the old material.

Using the 309 in Live Performance:

The Rave-O-lution 309 is ideally suited for live performance. The large number of knobs and buttons allow for total performance input. All important sound parameters and Pattern variations are at your fingertips. You can combine any number of Patterns as you go and edit them in live performance with glitch-free transitions. The Patterns are accessed by buttons and may be combined with Special-Loop Tracks, also on buttons. All instrument sections are mutable.

How to assign Patterns to buttons:

To assign User Patterns to the Pattern buttons, press the EDIT button and scroll to page 4 of the Edit menu.

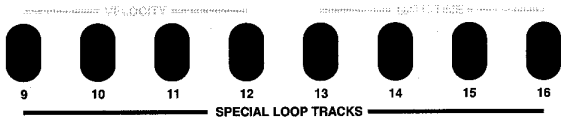
```
Select Edit  <4|
[Pads] [System]
```

Press the F1 button to call up the Pad setup menu.

```
Edit Pad1 Assign
|1> Pattern: P01
```

Press the button corresponding to where you would like to store a Pattern or Motif, and scroll to the desired Pattern number with the EDIT VALUE wheel.

The SPECIAL-LOOP-TRACKS:



Select the Track on which to use the 'Special-Loop-Tracks' function. There are 4 Menu pages for selecting editing parameters. For this example, press button 9:

Press button 9. The Display shows the following:

```
Edit Pad9 Assign
<9> Track: Snare
```

On this page select the instruments-section, to which the Special-Loop-Track-Motif should belong. Values are edited with the Edit value wheel. Select menu page 10 for editing by pressing the PAGE buttons:

```
Edit Pad9 Assign
<10> MotBnk: ROM
```

Select the Motif Bank with the EDIT VALUE wheel:

```
Edit Pad9 Assign
<11> Motif:  94
```


Downloaded from www.Manualslib.com manuals search engine

Select menu page 12 with the PAGE buttons.

```
Edit Pad9 Assign
<12> Sound:    0
```

Select the Sound, with which the Special-Loop-Track-Motif is associated, with the EDIT VALUE wheel.

Adjusting the TEMPO:

The Tempo of the Sequencer can be set while playing in Realtime with the EDIT VALUE wheel. As an alternative, the SHIFT button doubles as a TAP button. The tempo is set when the TAP button is tapped rhythmically at the desired tempo. 4 taps are required to compute the tempo.

Tip: SHIFT/TAP button functions can be controlled remotely with a footswitch. (This is great for Live performance.)

The LOOP-FADE knob:

The LOOP-FADE knob regulates the volume of the Special-Loop Tracks.

Synchronizing the 309 with an other sequencer:

The 309 can be synchronized, via MIDI-Clock, to other sequencers and Drum machines. In Playmode, the 309 always sends MIDI-Clock. To control the 309's sequencer from an external source, set the MIDI synchronization parameter to EXT. Pressing the PLAY button puts the 309 into 'Play-Ready' mode. Playback commences when the External machine is started. The STOP button stops all instruments.

The Display shows the following:

```
Select Edit   <4|
 [Pads] [System]
```

Press the F3 button to enter the Edit System. Select menu page 3 with the PAGE dial:

```
Edit System/Midi
<3> MidiSync: INT
```

Select the MIDI Sync method with the EDIT VALUE wheel. When set to EXT, the 309 can receive the MIDI-Clock of an other instrument. When set to EXT, the 309 can be started and stopped from the connected unit.

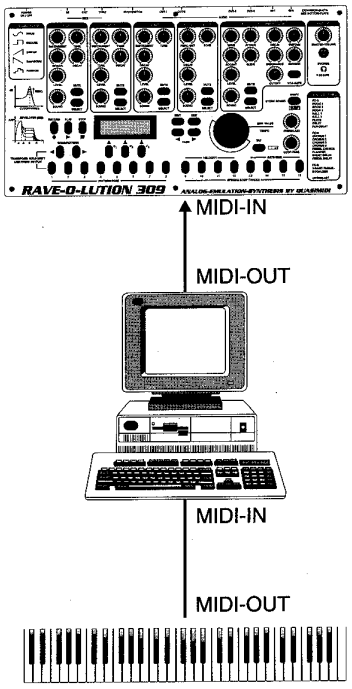
Tip: While playing back, pressing the PLAY button second time, freezes the currently running Pattern. Pressing PLAY again leaves the Freeze function, resuming normal playback.

Connecting the 309 to a computer:

Although the 309's sequencer is quite extensive in its capabilities, there are times when a Computer sequencer is preferred. To use the 309 with a Computer, you will need the following:

- The 309!
- Computer (Macintosh, PC, Atari) with MIDI-Interface
- Sequencer software (Vision, Cubase, Logic etc.)
- 1 or 2 MIDI cables

First connect the cables as follows:



- Computer MIDI interface Out > 309 MIDI In
- Masterkeyboard MIDI Out > Computer MIDI Interface MIDI In

To use the 309 as a Sound expander, only one MIDI connection is necessary. (Computer MIDI out > 309 MIDI In). To send a data bulk dump to the Computer for storage, a second MIDI cable, (309 MIDI Out > Computer MIDI In), is necessary.

In the Computer 's sequencer software, map MIDI Channels 1 to 5 and play some notes on your keyboard. By default, MIDI Channels 1 thru 5 correspond with the 309's instrument sections.

MIDI Channel assignment can be changed in the Edit System menu. Press the EDIT button. Scroll to Page 4 with the PAGE Dial. The display shows the following:

```
Select Edit   <4|
 [Pads] [System]
```


Downloaded from www.Manualslib.com manuals search engine

Press F3 to enter the System Edit menu.

```
Edit System/Midi
|1> Sys.Chan:  1
```

On the first page of this menu you can select the System Channel. The MIDI Channels of the instrument sections are always sequential, starting with the Kick Drum. Example: If the System Channel is set to Channel 5, the Kick operates on Channel 5, the Snare on Channel 6, the HiHat on Channel 7, and so on.

Bulk Dump of all parameters:

The contents of the 309's memory (Songs, Patterns and Sound parameters) can be transferred to a Computer. This enables safe storage of valuable data. This procedure is known as a Bulk Dump. Bulk Dump data is sent from the 309's MIDI Out in the form of a System Exclusive message (SysEx).
To execute a Bulk Dump, the 309's MIDI-Out must be connected to the Computer's MIDI in. The 309 offers three kinds of Bulk Dumps:

- *Temporary Dump-*
  Only active parameters are sent out. These are the currently selected Patterns and Sound parameters.

- *Sound Dump-*
  The Sound parameters of all the Instruments are sent.

- *Song Dump-*
  The Song parameters including Patterns are sent.

The Dump functions are accessed by pressing the WRITE button. The three Dump functions begin on menu page 7, accessed with the PAGE dial:

```
<7> Send Temp?
   [ok]
```

Menu page 7 contains the Temporary Dump function. The F1 button starts the Dump:

```
<8> Send Sounds?
   [ok]
```

Menu page 8 contains the Sound Dump function. The F1 button starts the Dump:

```
<9> Send Songs?
   [ok]
```

Menu page 9 contains the Song Dump function. The F1 button starts the Dump.

The procedure for recording Bulk Dumps involves sending data from the 309 while the sequencer is recording. Start the sequencer recording first, then press the F1 button on the 309. A few points to be aware of:

>>>> Many sequencer programs have a MIDI data filter which limits the types of data the sequencer can record. This is an effective way to thin out excessive MIDI data before it is even recorded. The Sys Ex filter must not be enabled for the Dump procedure to work.

>>>> Many Sequencer programs aquired as Shareware and 'Lite' or Demo versions are incapable of recording System Exclusive data. These programs are therefore not useful for 309 Bulk Dumps.

>>>> To restore the Bulk Dump data back to the 309, simply play back the sequence.

With a good sequencer program all Sound parameters of the 309 can be controlled and automated remotely. It is also possible to select Sounds for each of the 5 sections via MIDI with the Program Change message. Refer to the sequencer program's manual for information about sending Program Change messages. For a listing of the Sound parameters accessable via MIDI, refer to page 23 of this manual.

System functions and the SYSTEM Edit menu:

Especially in connection with an external sequencer or other units, it could be an advantage to make special presets in the 309, which will determine System parameters. These parameters are located in the Edit System menu. Press the right Page button to get to menu Page 4:

```
Select Edit  <4|
 [Pads] [System]
```

The F3 button opens the Edit System menu. Page 1 of this menu is for selecting the Sytem MIDI Channel.

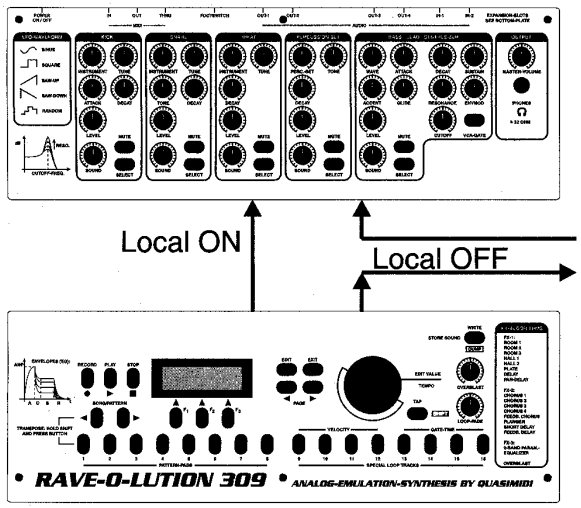
```
Edit System/Midi
|1> Sys.Chan:  1
```

Edit System menu page1 is for setting the System Channel. MIDI Channel assignments for the Instrument sections are always sequential, starting with the Kick Drum on the System Channel. Example: If the System Channel is set to Channel 5, the Kick operates on Channel 5, the Snare on Channel 6, the HiHat on Channel 7, and so on. Select menu Page 2 with the right Page button:

```
Edit System/Midi
<2> Local:    ON
```


Downloaded from www.Manualslib.com manuals search engine

Edit System menu page 2 contains the Local parameter. With Local OFF, the Sequencer does not send Note and Controller data to the Sound generation section, it now sends Note and Controller data to the MIDI Out. This is useful when the 309's MIDI In and MIDI Out are connected to a software sequencer to avoid Midi Event doubling, timing problems and feedback loops while turning the knobs.



Edit System menu Page 3 contains the parameter for setting the synchronization method:

```
Edit System/Midi
<3> MidiSync: INT
```

The parameter values include INT (internal) and EXT (external).

```
Edit System/Midi
<4> RxPrgChg: ON
```

Menu page 4 contains the parameter which determines whether or not the 309 receives MIDI Program Change messages.

```
Edit System/Midi
<5> RxParam:  ON
```

Edit System menu page 5 contains the parameter which de-termines whether or not the 309 receives MIDI Continuous Controller messages.

```
Edit System/Midi
<6> TxPrgChg: ON
```

Edit System menu page 6 contains the parameter which determines whether or not the 309 transmits MIDI Program Change messages.

```
Edit System/Midi
<7> TxParam:  ON
```

Edit System menu page 7 contains the parameter which de-termines whether or not the 309 transmits MIDI Continuous Control messages.

```
Edit System/Midi
<8| TxClock:  ON
```

Edit System menu page 8 contains the parameter which de-termines whether or not MIDI Clock data of the 309 is transmitted or not.

Listing of hidden Button Combinations:

Button and Knob Combination:	Edit Level:	Function:
FOOTSWITCH	All	Footswitch functions as Shift button.
SHIFT / TAP	All	Press 4 times to set Tempo.
SELECT + Knob Movement	Playback	Knobs in the Synth Section control any Instr. while Select button is held.
LOOP-FADE	Record	Adjusts the Metronome level.
SHIFT + PAGE	Drumgrid & Step Sequencer	Selects Grid Resolution.
SHIFT + SONG/PATTERN	Step Sequencer	Transposes in Octave increments.
SHIFT + SELECT	Edit-Pattern & Playback	Randomly selects Motives.
SELECT + DIAL	Playback	Selects Sounds in fine increments.
SHIFT + VELOCITY	Drumgrid	Selects among 4 velocities, After selecting doubleclicking provides confirmation.

Downloaded from www.Manualslib.com manuals search engine

Waveform and Sample Listing of the 309:

Bass-Waves (28 Sounds)
MoogWav1
MoogWav2
DistSin1
DistSin2
D_Trian1
D_Trian2
MixWavA2
Form_A_1
Form_A_2
Form_B_1
Form_B_2
Form_C_1
Form_C_2
RolSaw_1
RolSaw_2
Sawtoth1
Sawtoth2
Sine_1
Sine_2
SineSaw2
SineSqu2
SineTri2
Square_1
Square_2
SqarSaw2
TriaSaw2
TriaSqu2
MixWav_4

Kicks (26 Sounds)
D_Kick1
D_Kick2
D_Kick3
D_Kick4
D_Kick5
808Kick1
808Kick2
808Kick3
909Kick1
909Kick2
909Kick3
909Kick4
909Kick5
HipKick
DistorBD
KickShrt
KicRev
KlickKic
KxiuKick
LongBD
ShrtBD
MS_Kick
AnaKick1
AnaKick2
AnaKick3
AnaKick4

Snares (25 Sounds)
606Snare
808Snar1
808Snar2
808Snar3
909Snar1
909Snar2
HipSnar
EfSnare1
EfSnare2
EfSnare3
EfSnare4
EfSnare5
FlSnare
IndSnare
HiSnare
DrySnar1
DrySnar2
MS20_Snr
Snare1
Snare2
Snare3
Snare4
Noise1
Noise2
Noise3

HiHats (7 Sounds)
MS_HiHat
NatHiHat
808HiHat
909HiHat
606HiHat
Fx_Hihat
MS_20_HH

Drumset-Instr. (128 Samples)
606ClHH
606Cymb
606_hTom
606_lTom
606_opHH
606SnarF
808_clHH
808_Clap
808Clave
808_Cow
808_Cymb
808hCong
808_hTom
808Kic1F
808Kic2F
808_lTom
808_mTom
808_Rim
808Sna2F
808Sna3F
808SnarF
909_Clap
909_clHH
909Crash
909hiTom
909Kic1F
909Kic2F
909Kic3F
909Kic4F
909loTom
909_mTom
909_opHH
909_Ride
909_Rim
909Sna1F
909Sna2F
Brickn
Cng1Mute
Cng1Palm
Cng1Slap
Cng2Mute
Cng2Palm
Cng3_OT
Cng3Palm
Cng3Slap
CngMuffl
CngMute
CngOpen
CngOTOF
CngOTOF2
CngOTOFF
CngPalm
CngSlap
CngSlOf
CngSlpHd
CngTips
DeepShak
DirtClap
DirtClp2
DirtHH
DistorBF
DrySna1F
DrySna2F
D_Kick1F
D_Kick2F
D_Kick3F
D_Kick4F
D_Kick5F
EfSnar1F
EfSnar2F
EfSnar3F
EfSnar4F
EfSnar5F
FingSnip
FipSnap
FlngClp
FlSnareF
F_Drum_1
F_Drum_2
F_Drum_3
F_Drum_4
F_Drum_5
F_Drum_6
F_Drum_7
F_Revs1
HighStck
HipKick
HipSnaF
HiSnarF
IndSnarF
Ito_HDMT
Ito_HDOT
Ito_HDS
Ito_LDM
Ito_LDOT
Ito_LDS
Iya_AHDO
Iya_AHDS
Iya_HDM
Iya_HDOT
Iya_HDS
Iya_LDM
Iya_LDO
Iya_LDS
KickShrF
KicRevF
KlickKiF
KxiuKicF
LongBF
MS_20HHF
MS_20SF
MS_KicF
NcHHFoot
NclHH
NormClap
Revers1
Ride
ShrtBF
Snare1F
Snare2F
Snare3F
Snare4F
Ticker
Udus1
Udus2
Udus3
Udus4
Metronom

Downloaded from www.Manualslib.com manuals search engine

MIDI Controller Listing:

The following lists the designated send and receive MIDI Controller numbers:

Controller-Nr.	Function:
1	Modulation wheel (default: LFO->VCO depth)
5	Glide Time
7	Mix Level
10	Panorama
11	Sound Level
12	Instr./Wave
14	Tune (32"..4"..)
15	VCF-Drive
16	VCF Cutoff
17	VCF Resonance
18	EG Attack
19	EG Decay
20	EG Sustain
21	EG Release
22	EG->VCA Gate ON/OFF
23	EG->VCF amount (Env.Mod.)
24	Dyn->VCF amount
25	(Accent) Veloctiy Response
26	LFO Depth
27	LFO Wave (0..4 = Sinus, UpSaw, DownSaw, Rect, Random)
28	LFO Rate (0,1..10 Hz)
29	LFO VCO Pitch amount
30	LFO VCF amount
31	LFO VCA amount
64	Holdpedal
91	FX1 send
93	FX2 send
120	All Sounds Off
121	Reset All Controllers
122	Local Off/On (value>=64)
123	All Notes Off

Attention Programmer !

The following section lists the System Exclusive data for the 309:

Rave-O-lution-309 System-Exclusive Format:

Request Data from device:

Byte No.	Value	Remarks
0	F0	System Exclusive start command
1	3F	QUASIMIDI id number
2	dv	device number = System channel-1
3	25	Rave-O-lution-309 id number
4	52	(R)equest data
5	ah	adress high
6	am	adress mid
7	al	adress low
8	dh	data count high (2 bit)
9	dm	data count mid (7 bit)
10	dl	data count low (7 bit)
11	F7	end of System Exclusive

Downloaded from www.Manualslib.com manuals search engine

Dump Data to device:

Byte No.	Value	Remarks
0	F0	System Exclusive start command
1	3F	QUASIMIDI id number
2	dv	device number = System channel-1
3	25	Rave-O-lution-309 id number
4	44	(D)ump data
5	ah	adress high
6	am	adress mid
7	al	adress low
8...	dt	data (7 bit)
...	F7	end of System Exclusive

Address Map:

```
(third byte is Adress-Offset)
00 00 00          system parameter
01 00 00          temporary common parameter
01 01 00          temporary sound/mix parameter (KICK)
01 02 00          -"-                 (SNARE)
01 03 00          -"-                 (HIHAT)
01 04 00          -"-                 (PERC)
01 05 00          -"-                 (BASS)
02 00 00          reserved
...
03 7F 00          -"-
04 00 00          temporary song event (step 0)
04 01 00          -"-       (step 1)
...                                 ...
04 63 00          -"-       (step 99)
04 64 00          reserved
...
04 7F 00          -"-
05 00 00          Kick-Sound 1 Parameter
05 01 00          -"-     2    -"-
...
05 3F 00          -"-     64   -"-
06 00 00          Snare-Sound 1 Parameter
06 01 00          -"-     2    -"-
...
06 3F 00          -"-     64   -"-
07 00 00          Hihat-Sound 1 Parameter
07 01 00          -"-     2    -"-
...
07 3F 00          -"-     64   -"-
08 00 00          Perc-Sound 1 Parameter
08 01 00          -"-     2    -"-
...
08 3F 00          -"-     64   -"-
09 00 00          Bass-Sound 1 Parameter
09 01 00          -"-     2    -"-
...
09 3F 00          -"-     64   -"-
0A 00 00          drumset 1 parameter (drum instr 1)
0A 01 00          -"-    (drum instr 2)
...                                 ...
0A 0B 00          -"-    (drum instr 12)
0B 00 00          drumset 2 parameter (drum instr 1)
0B 01 00          -"-    (drum instr 2)
...               ...
0B 0B 00          -"-    (drum instr 12)

13 00 00          drumset 10 parameter (drum instr 1)
13 01 00          -"-    (drum instr 2)
...                                 ...
13 0B 00          -"-    (drum instr 12)

14 00 00          pattern 0
14 01 00          pattern 1
...
14 63 00          pattern 99

15 00 00          song 1 name
15 01 00          song 1 common
```


Downloaded from www.Manualslib.com manuals search engine

```
15 02 00          song 1 song event (step 1)
15 03 00          -"-       (step 2)
...               ...
15 65 00          -"-       (step 100)
16 00 00          song 2 name
...               ...
17 00 00          song 3 name
...               ...
24 65 00          song 16 song event (step 100)

25 00 00          reserved
...
76 7F 00          -"-

77 00 00          user motiv block 0
77 01 00          -"-        1
...               ...
77 63 00          -"-       99

77 64 00          reserved
...
77 7F 00          -"-
77 7F 7F          command: clear all user motivs!!
78 00 00          reserved
...
7F 7F 00
```

Address Offsets:

SYSTEM-Parameter

```
00          system channel                  /* 0..15 (1..16) */
01          local                           /* 0..1 (OFF,ON) */
02          extern sync                     /* 0..1 (OFF,ON) */
03          program change input            /* 0..1 (OFF,ON) */
04          parameter control input         /* 0..1 (OFF,ON) */
05          program change out                    /* 0..1 (OFF,ON) */
06          parameter control out           /* 0..1 (OFF,ON) */
07          midi clock out                  /* 0..1 (OFF,ON) */
08          metronom                        /* 0..1 (OFF,ON) */
```

COMMON-Parameter

```
00          speed                           /* 0..127  speed bit 1..7 (in BPM) */
01          groove                                /* bit 1..4: groove 0..8 (0%..100%) */
                                            /* bit 0: speed bit 0 */
02          current velocity pad            /* 0..3 */
03          pad velocity 1                  /* 0..127 */
04          pad velocity 2                  /* 0..127 */
05          pad velocity 3                  /* 0..127 */
06          pad velocity 4                  /* 0..127 */
07          current gate pad                /* 0..3 */
08          pad key transose                /* 36..60 (0..+2 Octaves) */
```

FX-Parameter

```
09          fx1   typ                       /* 0..7 (room1...pan-delay) */
0A          fx1   level                     /* 0..127 */
0B          fx1   time                      /* 0..127 */
0C          fx1   feedback                  /* 0..127, only if fx1 typ = 6 or 7 */
0D          fx2   typ                       /* 0..7 (chorus1...fb-delay */
0E          fx2   level                     /* 0..127 */
0F          fx2   feedback                  /* 0..127 */
10          fx2   delay                     /* 0..127 */
11          fx2   rate                      /* 0..127 */
12          fx2   depth                     /* 0..127 */
13          eq1   gain                      /* 0..127 (-12..+12dB) */
14          eq1   freq                      /* 0..127 (0..4.7kHz) */
15          eq2   gain                      /* 0..127 (-12..+12dB) */
16          eq2   freq                      /* 0..127 (0..4.7kHz) */
```

Pattern Pad 1..8

```
17          pad 1 pattern nb                /* 0..99 */
...
1E          pad 8 pattern nb                /* 0..99 */
```


Downloaded from www.Manualslib.com manuals search engine

```
Special-Loop-Track-Pad 9..16
1F    pad 9 motiv nb                /* 0..99 */
...
26    pad 16 motiv nb               /* 0..99 */
27    pad 9 motiv bank              /* 0..1 (User,Rom) */
...
2E    pad 16 motiv page             /* 0..1 (User,Rom) */
2F    pad 9 track                   /* 0..4 (Kick..Bass) */
...
36    pad 16 track                        /* 0..4 (Kick..Bass) */
37    pad 9 prg nb                        /* 0..63/127 */
...
3F    pad 16 prg nb                 /* 0..63/127 */

PART-Parameter
00    trackmode                     /* 1,2 (int,ext) */
01    sound nb                      /* 0..63/127 */
02    wave nb                       /* 0..28/xx */
03    sound level                   /* 0..127 */
04    pan                           /* 3..64..124 (left..center..right) */
05    fx1 send                      /* 0..127 */
06    fx2 send                      /* 0..127 */
07    mix level                     /* 0..127 */
08    tune                          /* 0..127 (32"..4") */
09    reserved
0A    filter drive                        /* 27..127 (0..100) */
0B    cutoff frequency              /* 0..127 */
0C    resonance frequency           /* 0..127 */
0D    eg attack                     /* 0..127 */
0E    eg decay                      /* 0..127 */
0F    eg sustain                    /* 0..127 */
10    eg release                    /* 0..127 */
11    eg vca gate                   /* 0,1 (off,on) */
12    eg vcf amtount                /* 0..127 */
13    dyn vcf amtount               /* 0..127 */
14    lfo wave                      /* 0..4 (Sine,UpSaw,DownSaw,Rect,Rnd) */
15    lfo rate                      /* 0..120 */
16    lfo depth                     /* 0..127 */
17    lfo pitch amt                 /* 0..127 */
18    lfo vcf amount                /* 0..127 */
19    lfo vca amount                /* 0..127 */
1A    reserved
1B    glide time                    /* 0..127 */
1C    reserved
1D    accent                              /* 0..127 */
1E    holdpedal                     /* 0,1 (off,on) */
1F    reserved
20...27  name

DRUM-Parameter
00    instrument                    /* 0..127 */
00    level                         /* 0..127 */
01    pan                           /* 3..64..124 (left..center..right) */
02    fx1 send                      /* 0..127 */
03    fx2 send                      /* 0..127 */
04    pitch                         /* 0..127 */

TRACK-Parameter
00    motiv bank                    /* 0..1 motiv bank 0..1 (user,rom) */
01    sound nb                      /* 0..127 */
02    motiv nb                      /* 0..63 */
03    level                         /* 0..127 */
04    pan                           /* 3..64..124 (left..center..right) */
05    fx1 send                      /* 0..127 */
06    fx2 send                      /* 0..127 */
07    groove                              /* 0..8 (0..100%) */

SONG-EVENT-Parameter
00    bars no.                      /* 1..64 (0 = end of song)*/
01    pattern nb                    /* 0..99 */
02    transpose                     /* 0..48 (-24..+24) */
03    mutes                         /* 0..1F (1bit/Track) */
```


Downloaded from www.Manualslib.com manuals search engine

Identity Request

Byte No.	Value	Remarks
0	F0	System Exclusive start command
1	7E	Common Non-Real-Time message
2	cc	channel number = system channel-1 *
3	06	general information
4	01	identity request
5	F7	end of System Exclusive

Identity Reply

Byte No.	Value	Remarks
0	F0	System Exclusive start command
1	7E	Common Non-Real-Time message
2	cc	channel number = sytem channel-1 *
3	06	general information•
4	02	identity reply
5	3F	Quasimidi id
6	25	Rave-O-lution-309 id
7	xx	Extension Board exists flag (00=no, 01=yes)
8	00	reserved
9	00	reserved
10..13	vv vv vv vv	Version no. (4 ascii characters, i.e '1.00')
14	F7	end of System Exclusive

* note that if cc = 7F the Rave-O-lution-309 respond regardless of what master channel it is on

Downloaded from www.Manualslib.com manuals search engine

RAVE-O-LUTION 309 MIDI IMPLEMENTATION CHART

Function		Transmitted	Recognized
Basic Channel	Default Changed	1-5 1-16	1-5 1-16
Mode	Default Messages Altered	3b* x	3b* x
Note Number	True Voice	36-96	36-96
Velocity	Note On Note Off	0 x	0 x
After Touch	Keys Channel	x x	x x
Pitch Bend	MSB (7 bit) LSB (1 bit)	0 x	0 0
Controller	Continuous MSB 0-31 Continuous LSB 32-63 Control Change 64-95 120 all sounds off 121 reset all controller	*1 64, 65 x *1 0 0	*1 64, 65 x *1 0 0
Program Change		0**	0**
System Exclusive		0***	0***
System Common	Song Position Song Select Tune Request	x x x	x x x
System Real Time	Clock Commands	0** 0**	0** 0**
Aux Messages	Local On/ Off All Notes Off Active Sens. System Reset	0 0 x x	0 0 x x

x = No
0 = Yes
* = multi-mode 3b
** = can be set to on/off in SYSTEM-Edit
*** = Dump-Functions
*1 = See manual, page with MIDI-Controller-List

Downloaded from www.Manualslib.com manuals search engine

WARRANTY REGISTRATION

Fill out the Registration Card and send to:

Quasimidi Registration
c/o RADIKAL TECHNOLOGIES
1119 North Wilson Ave
Teaneck, NJ 07666

How to Validate the Warranty:

To validate your Warranty, fill out the Warranty card and return it to Radikal Technologies within ten days from date of purchase. By returning the card the Warranty period will be extended from 6 months to a full 12 months.

What is covered and what is not covered?

This Warranty covers all defects in material and workmanship for six (or twelve) months from the date of original purchase. This Warranty does not cover damage to, or deterioration of the external cabinet or internal circuitry resulting from accident, misuse, neglect, attempted unauthorized repair or failure to follow instructions in this Owners Manual.
This Warranty does not cover units that have been modified or altered (except an authorized QUASIMIDI modification which includes its own Warranty coverage).
This Warranty does not cover damage that may occur during shipping. Software/Firmware are sold as is and are not covered by this Warranty.

How to obtain Warranty servicing:

Return your unit to an Authorized QUASIMIDI Service Center. If you are unable to locate one, write or call the QUASMIDI Factory Service Department. We will either refer you to an Authorized Service Center or issue a Return Authorization number for Factory service. Units returned to QUASIMIDI for Factory service must display the Return Authorization number on the outside of the shipping carton and on all related documents, or units will be returned freight collect. The owner must pay all shipping costs to and from the Factory.
Shipment of the product to QUASIMIDI is the responsibility of the owner, and should be insured by the owner for the full value of the product.

NO CLAIM FOR WARRANTY WILL BE HONORED WITHOUT PROOF OF PURCHASE

Limitations of implied Warranties and exclusion of certain damages. Any implied Warranties, including Warranties of usefulness for a particular purpose are limited in duration to the lenghth of the Warranty.

QUASIMIDI's liability for any defective product is limited to repair or replacement of the product.

QUASIMIDI shall not be liable under any circumstances for:
1) Damages based upon inconvenience, loss of use of the unit, loss of time, interrupted operation or commercial loss.
2) Any other damages, whether incidental, consequential or otherwise, except damages which may not be excluded under applicable law.

Downloaded from www.Manualslib.com manuals search engine

309 Technical Specifications:

Method of synthesis and tone generation:	A.E.S. - Analog-Emulation-Synthesis. Subtractive Synthesis. Modeled component chain with modeled waveforms
Polyphony:	17 voices. Monophonic Bass/Lead synthesizer, duophonic HiHat, 14 drum and percussion voices.
Sound Storage:	64 internal storage locations for the Kick, Snare, HiHat and Percussion sections. 128 Synthesizer storage location. 10 Percussion kits.
Sequencer:	5 track sequencer plus 1 mastertrack. Realtime and drumgrid style programming. Realtime and Step sequencing for the Bass/Lead synthesizer. 99 ROM Motifs, 100 User Motifs, special user defined Loop Tracks.
Song and Pattern capacity:	16 Songs, 100 Pattern with up to 64 bars per pattern.
Effects:	17 Algorithms, 3 individual effect processors. 1) Reverbs 2) Modulation and Delay 3) 2 band parametric EQ. Additionally an Overblast control for linear bass boost..
Connections:	2 x 1/4 inch mono plugs for left and right stereo outputs. 1 MIDI-In, 1 MIDI-Out, 1 MIDI-Thru. 1/4 inch footswitch connector. Optional: 2 additional 1/4inch mono outputs and 2 1/4inch mono inputs (Audio-In), 2 locations for tonal expansion.
Display:	2x16 charactor backlit LCD display.
Power Requirements:	External Power supply 10.5 voltsDC 1.5/AMPS (US: 12 voltsDC/ 2AMPS).
Dimensions:	400 mm (width), x 225mm (depth), x 98mm (height). With optional rackears 482mm width.
Weight:	approx 3 kg.

Downloaded from www.Manualslib.com manuals search engine

FCC-Regulations:

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordances with the manufacturer's instructions, may causes interference to radio and television reception. It has been type tested and found to comply with the limits for a class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designated to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment OFF and ON, the user is encouraged to try to correct the interference by one or more of the following measures:

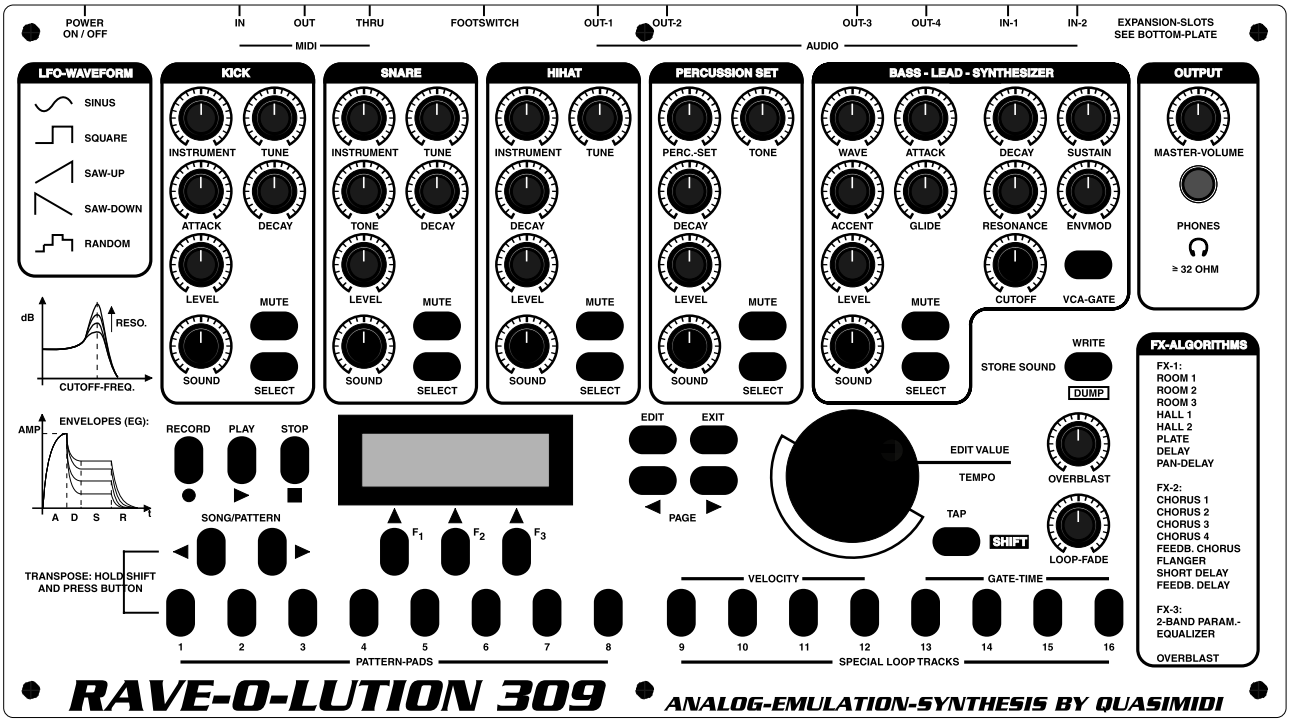
Reorient the receiving antenna
Relocate the computer with respect to the receiver
Move the computer away from the receiver
Plug the computer into different outlet so that the computer
and receiver are on different branch circuits.

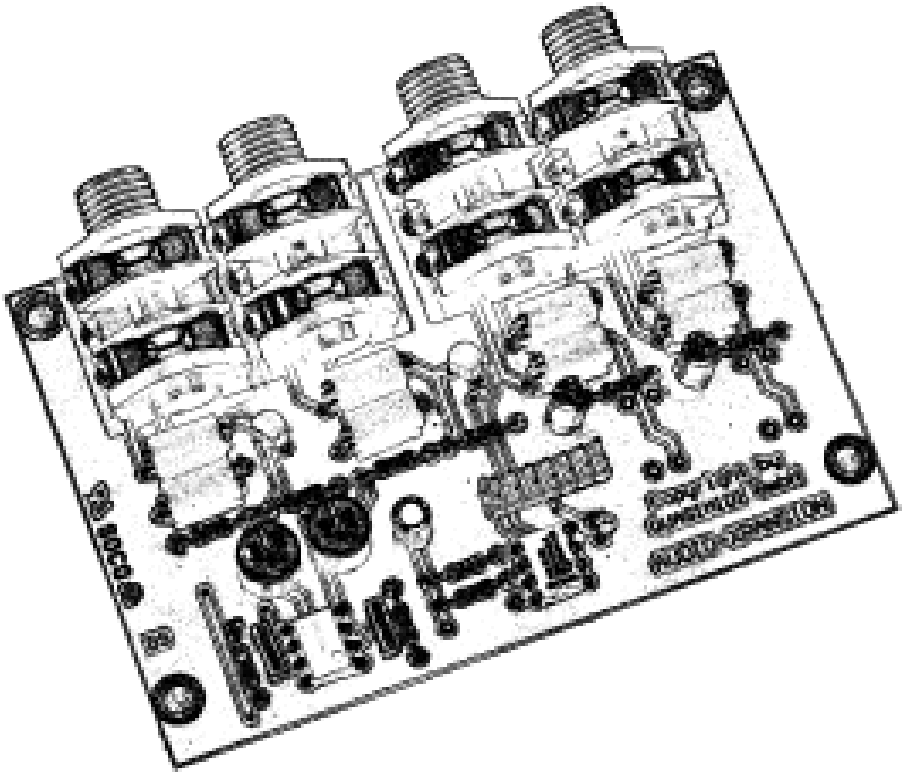
If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

Downloaded from www.Manualslib.com manuals search engine

RAVE-O-LUTION 309

AUDIO-EXPANSION





QUASIMIDI

Downloaded from www.Manualslib.com manuals search engine

Contents:

Introduction 3
Help with technical problems 3

Installationguide 4
Installation of the OS-EPROM 4
Installation of I/O-Board 6
Initialization of the 309 8

The Audio-Inputs 9
Treatment of external sound sources via the audio inputs of the 309 9
Editing of the Input Sections 10

Assignement of Individual Outputs 12

New functions of the WRITE-Menu 13

New Sequencer functions 15

Warranty Conditions:

To comply with the warranty conditions we ask you to observe the following warnings:

- Do not expose the Audio Expansion Board to high temperatures.

- Keep the board away from high humidity.

- Do not touch the card' s sockets or contacts.

- Protect the board and IC from electrostatic discharge.

- Operate the board only in the RAVE-O-LUTION 309.

QUASIMIDI does not assume responsibility for damage resulting from mishandling or improper installation procedures.
This product is under warranty from the factory for a period of 6 months.

Downloaded from www.Manualslib.com manuals search engine

Introduction:

Congratulations on the purchase of the Audio I/O Expansion. This package will increase the functionality of your Rave-O-Lution 309 tremendously. The following new features are at your disposal after installation:

1.) 2 additional polyphonic audio outputs.

2.) 2 additional audio inputs for treatment of external sound sources using two complete A.E.S. Synthesizers.

3.) Numerous new functions have been added to the operating system, which will make creating music with your 309 more flexible and intuitive.

Before you can start taking advantage of these new features, you will have to install the I/O Expansion. Please adhere to the installation procedures described in this manual. There are plenty of pictures to clarify matters. If you don' t understand any of the explanations of the new functions we recommend consulting your original 309 manual.

Important! These installation instructions are not meant to be a replacement for the 309 Manual. To get the most out of this update, you must have an understanding of how the RAVE-O-LUTION functions.

Help with technical problems:

If you are still experiencing problems, even after reading the manual, please call the customer service department during regular office hours (see rear cover). If you do not feel capable of handling the installation yourself, our distributor or one of the authorized dealers (see rear cover) will be happy to provide installation service. Please let them know ahead of time, as it will help to cut down on unnecessary delays.

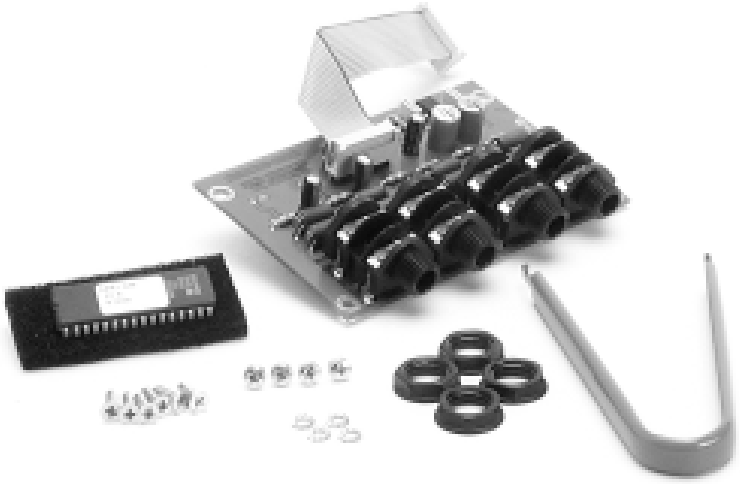
CAUTION!!! FOLLOW THESE INSTRUCTIONS TO PREVENT FIRE; ELECTRIC SHOCK OR PERSONAL INJURY.

* Before installing the Audio-Expansion, make sure to read the following instructions and the 309 Owner' s Manual.
* Do not open the 309 before disconnecting the AC-Adaptor.
* Use care when handling the Audio-Expansion and the included IC' s. All chips are sensitive to electrostatic charges.

Please follow the instructions in this installation guide carefully to avoid damaging the IC' s and the expansion board.

Downloaded from www.Manualslib.com manuals search engine

Included in the package, besides this manual, are following items:



- 6 countersunk Phillips screws
- 4 plastic nuts
- 4 small thread screws
- 4 washers
- 1 EPROM with OS 2.0 in anti-static foam material
- I/O-Board incl. Cable
- IC removing tool

Check to see all the items listed above are included in the package. In addition to the above listed tool you will need: a Phillips screwdriver to remove the screws and a soft cloth or the Styrofoam of the 309' s shipping box to place the instrument.

ATTENTION: BEFORE DOING ANYTHING, BACK-UP ANY VALUABLE USER-MOTIFS AND SOUND DATA, BECAUSE THIS PROCEDURE REQUIRES RE-INITIALIZATION OF THE 309' s MEMORY.

IMPORTANT: The included IC and Expansion-board are sensitive to electrostatic charges. This procedure requires that you periodically "Ground" yourself, by touching a grounded object such as a water pipe or a grounded piece of equipment. Grounding yourself prevents the static charge in your body from damaging the sensitive IC and Expansion-board.

Installation of the OS-EPROM:

a.) To start the installation, be sure to disconnect the AC-adaptor

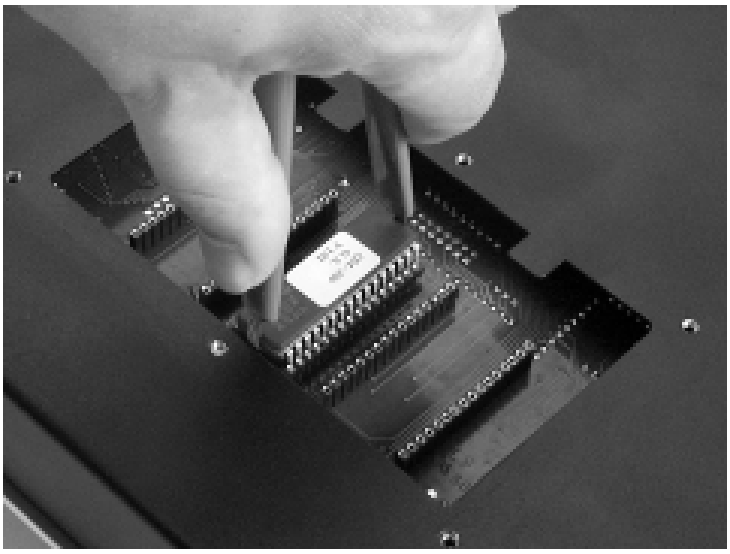
b.) Place the 309 with the bottom side up on a soft cloth. To place the 309 in a safe position it is better to use the Styrofoam of the shipping box.

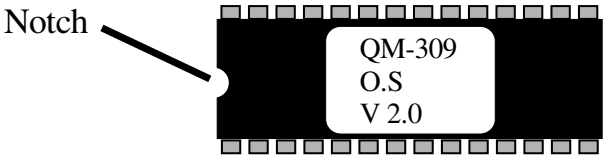
c.) Remove the six screws of the small bottom plate.

d.) Here you see three IC-sockets. The OS is located in the middle and labeled: QM-309 OS X.xx. Before exchanging the IC notice the shape of the chip. To avoid polarity mistakes, the IC is marked with a notch on one end. The notch of the new IC must be oriented in the same direction as the IC that is removed. Installing the chip backwards will destroy them. For this reason pay careful attention to the polarity.

Downloaded from www.Manualslib.com manuals search engine

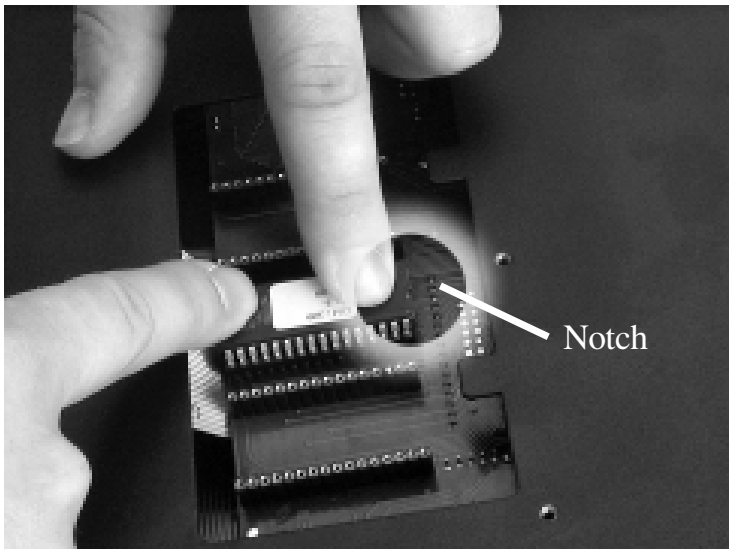
e.) Using the IC tool, remove the chip. To remove the IC from the socket, place the IC tool at the both ends of the IC. Be careful to place it directly under the IC, not under the socket. Pull carefully, alternating from the left and right sides, and remove the chip. Once removed, place the old chip on the backside of the foam material.





EPROM with Operating System

Don' t forget to "Ground" yourself now.



Insert the new IC into the socket. Pay attention to the polarity (notch!) and make sure that all the IC' s pins fit the socket.

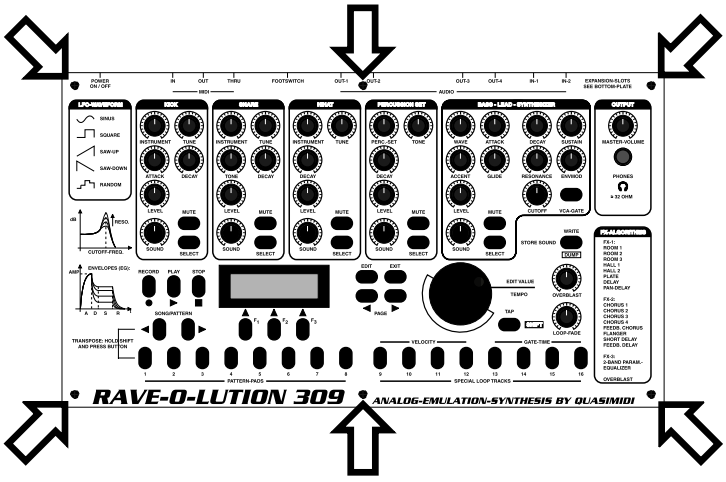
First, press the IC into the socket gently, then double-check the polarity and the positions of all pins a second time. If everything is OK, carefully press the IC into the socket until fully seated.

f.) Screw the small bottom plate onto the 309 body.

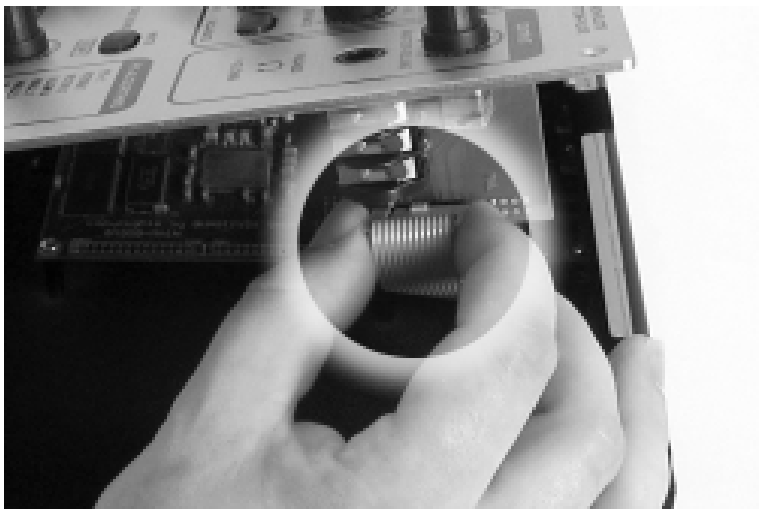
Downloaded from www.Manualslib.com manuals search engine

Instalation of I/O-Board:

1.) Remove the 6 screws from the Frontpanel of the 309.



The arrows show the position of the screws.



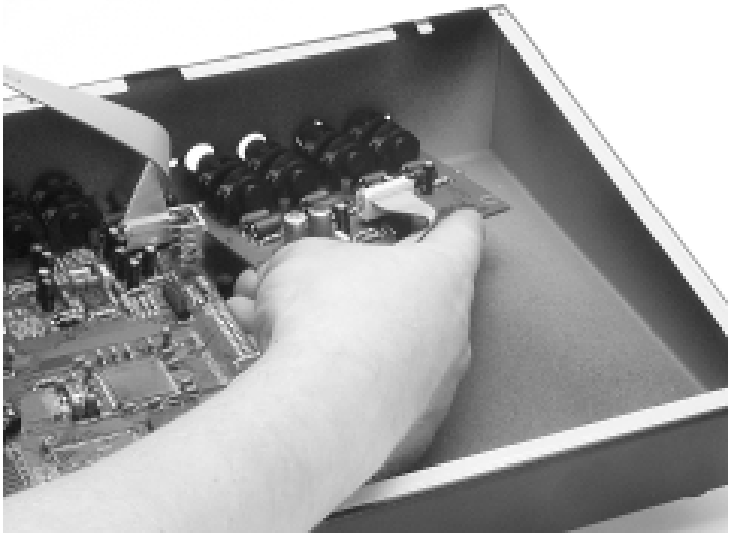
2.) Carefully lift the Frontpanel. Don' t you forget the position of the cable on the right handed volume-knob-board (red marked cable). Remove the cable from the volume-knob-board carefully. It is very important to fix the cable at the same position later on.

3.) Turn the Frontpanel counter-clockwise to 90º.
To avoid the damage of the contacts place a cardboard between the Frontpanel and the 309' s body.

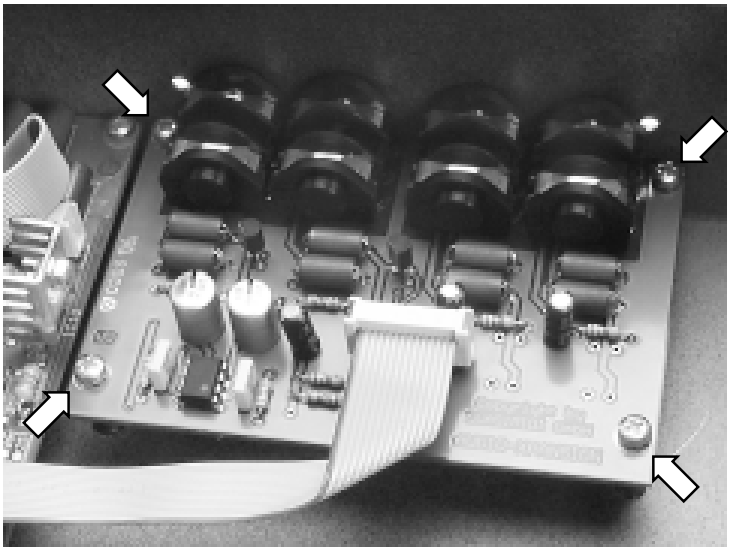
Downloaded from www.Manualslib.com manuals search engine

4.) Remove the screws from the outside of the body. These screws fix the metal sheet where the I/O-Expansion will be placed.

5.) Place the jacks of the I/O-Board through the 4 holes.

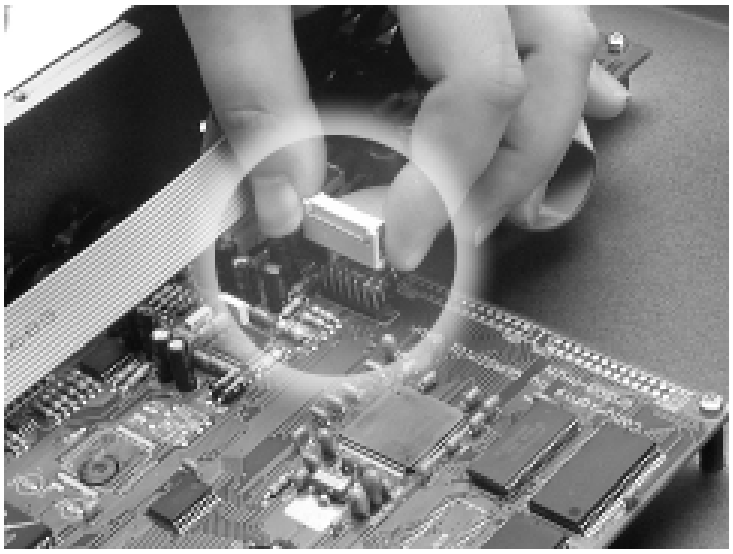


6.) Fix the Board with the included 4 screws. To optimize the attaching don' t forget to put the 4 washers under the screws.



The arrows show the position of the screws and the washers.

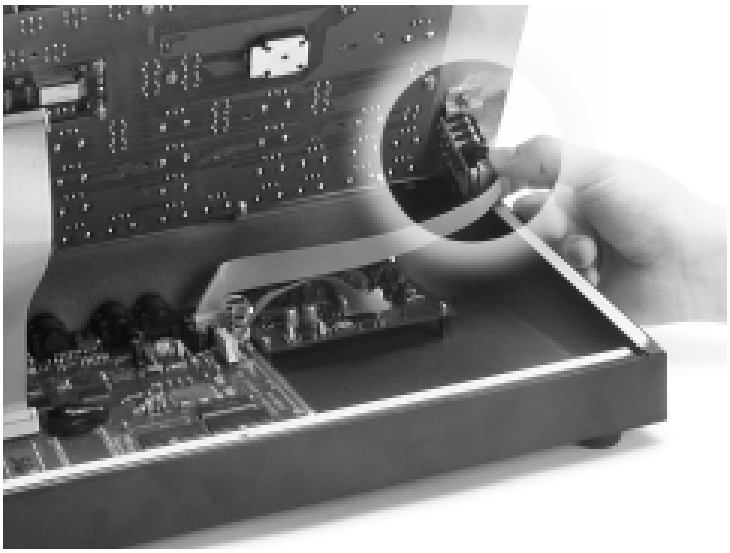
Downloaded from www.Manualslib.com manuals search engine



7.) Now the attached cable on the I/O-Board must be connected with the Mainboard of the 309. There is just one way to connect the cable with the "AUDIOEXP" named connector on the Mainboard because it is already pre-bent.

8.) In this step you have to fix the 4 jacks of the I/O-Board with the included 4 plastic nuts. Please attach the nuts with your fingers only. Don' t use a plier. Otherwise the nuts and jacks may be damaged.

9.) Put the Frontpanel into installation position and lean it back carefully.



Attach the cable of the volume-knob board to its connector. Ensure the correct position of the cable (see step no. 2).

10.) Check again the correct fitting of all cables. Now put the Frontpanel onto the body. Take care that there is no cable stucked between the Frontpanel and the body. Fix the Frontpanel crosswise with the 6 screws.

Attention: Don' t tighten the screws too hard! The screws and the body of the 309 could be damaged!

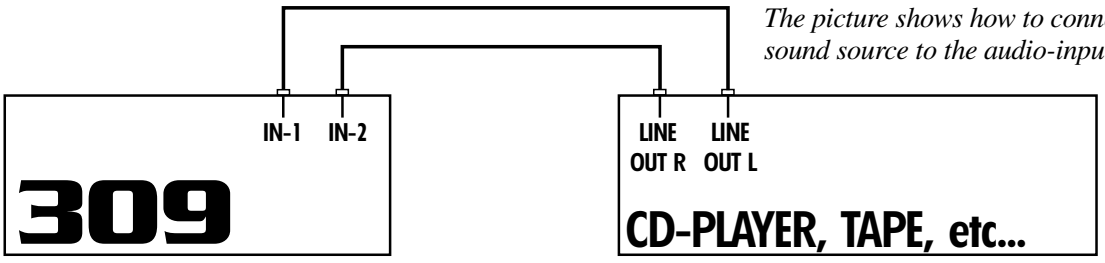
Downloaded from www.Manualslib.com manuals search engine

Initialization of the 309:

After changing the OS of the 309 it is necessary to initialize the instrument. Otherwise the I/O-Expansion will not be recognized.
With the 309 turned off, press and hold the "WRITE"-Button of the 309 while you switch the power on. The display will show: INITIALIZE ALL? To confirm press button F1. Don' t worry, this may take some seconds.
Now your 309 is ready for operation and you can reload the backup.

Treatment of external sound sources via the audio inputs of the 309:

Some of the 309 users may not be totally aware of what can be done having the audio inputs access a synthesizer. Below, you will find a few examples, which you will be able to modify to fit your own needs.
First of all you need a sound source. Use a CD player or a Tape Deck. These units provide the "Line-Level" required for the 309. Connect the outputs of your unit (usually indicated by "Line-Out" or "Output") with the Inputs 1 or 2 of the 309. Insert a CD or a Cassette in your unit and hit Play. You now should be able to hear the music of your sound source via the main-outputs or the headphone output of the 309 (on initialized units).



The picture shows how to connect an external sound source to the audio-inputs of the 309.

Hold down the F3 button, under the display, and turn the CUTOFF pot in the BASS-LEAD-SYNTHESIZER section. You' ll hear the sound of the external audio signal getting brighter or darker. This process is generally referred to as filtering. As a next step hold down the F3 button and turn the RESONANCE pot slowly to the right. The audio signal will get brighter, as certain frequencies are emphasized. As you advance the pot, the filter will start to self-oscillate. Try a combination of the CUTOFF and RESONANCE pots. Depending on the source-material used, this can generate some really interesting effects.

Of course you can use any number of other sound sources as well: Synthesizers, samplers, radios, DAT-recorders, turn- tables (in connection with a pre-amp or a DJ Mixer), a microphone (in connection with a pre-amp), a mixer or basically anything that produces audio with a pre-amp gain stage.

Downloaded from www.Manualslib.com manuals search engine

Editing of the Input Sections:

For each of the two Audio Inputs IN-1 and IN-2 you have a complete A.E.S. synthesis section available. This means, you can treat (affect) the external sound-sources with the same parameters, which previously were only for internal use on your instrument. As there are no separate pots on the front panel for the inputs, thefollowing will show you how to access these new parameters.

As a 309 Owner we assume you are familiar with accessing the pots, of the BASS-LEAD-SYNTHESIZER (for sound editing purposes), via the SELECT buttons of the individual instrument sections. The same applies with the audio inputs. Here the F1-F3 buttons found under the display serve as SELECT buttons. F1 can be used for the selection of IN-1, the F2 button for the selection of IN-2. Using F3 you can select simultaneous use of In-1 and IN-2. This is particularly useful for the treatment of stereo signals coming from a CD Player for instance.

Specifics about the Edit Menus of the Audio Inputs:
There are two ways to access the Edit Menu of the audio inputs. The first one you already know. Push the EDIT button to the right of the Display. You are now in the SELECT EDIT Menu. Push the right PAGE button. When you reach page 5 of the menu, the display will show:

```
Select Edit  <5|
_[Ex1][Ex2][1&2]
```

Open the menu [Ex1] by pushing the F1 button. The display should show the following menu page:

```
Edit  Ext1-Sound
<6> Wav:     ---
```

You can achieve the same result by double clicking the F1 button while in the main menu. This step will open the Edit Menu for Input 1 directly. The same procedure works with buttons F2 and F3. Double clicking F2 opens the Edit Menu for Input 2 and double clicking F3 opens the Edit menu affecting both inputs simultaneously (Stereo mode). Now push the left PAGE button until the display shows menu page 2:

```
Edit Mix T: Ext1
|1> MixLevel:100
```

On this page it is possible to adjust the level of the external sound source in relation to the internal sounds of the 309. You can also adjust this parameter with the level pot of the BASS-LEAD Section, while holding down the F1 button.
Push the right PAGE button to get to the next menu page:

Downloaded from www.Manualslib.com manuals search engine

```
Edit Mix T: Ext1
<2> Pan:    OUT2
```

Here you can set the pan position for the sound-source on IN-1. You will now find another new feature of the expansion card, which also affects the MIX menu of the other Instrument sections. When panning an instrument or your external sound source all the way left, the sound will output only via OUT 2 (LEFT) of the 309. If you pan all the way right you will get to OUT 1, OUT 3 and OUT 4. OUT 1 outputs the sound only on the RIGHT channel of the stereo-sum. OUT 3 and OUT 4 are the new individual outputs, which the Audio Expansion provides you with. You will find a more detailed explanation of the Individual outputs in the section "Assignment of Individual Outs" in this manual.

On page 3 and 4 of the Menu you will find the effect sends:

```
Edit Mix T: Ext1
<3> Fx1Send:   0
```

```
Edit Mix T: Ext1
<4> Fx2Send:   0
```

Here you can adjust, how much of the external sound-source is being sent into the effect sections FX 1 and FX 2 of the 309.
Caution: These parameters are not accessible, when the external sound sources are being routed to one of the individual outputs OUT3 or OUT 4. These are dry outputs.

On page 5 of the menu you will find another new, usable feature:

```
Edit Mix T: Ext1
<5> Trigg: NoTrg
```

In this basic setting the signal of the external sound-source is being sent through the filter and amplifier (VCA) of the 309. Turning the EDIT-VALUE dial, you will be able to chose from the individual instrument sections of the 309 among other options. This selection will serve to have the external sound signal triggered by the rhythm of a sequencer track of the 309. This will create the so-called "Gater-Effect". You can choose a different trigger track for each individual input. It is of course essential to have the sequencer of the 309 running to make this effect operational. When the external sound source is being triggered by a sequencer track you additionally have the envelope curves (EG) of the 309 available for further treatment of the sounds. With the setting "Midi" you are able to send a Trigger-Sequence from an external sequencer. When the system channel of the 309 is set to 1 (Edit System), Input 1 is being triggered on Midi Channel 6 and Input2 on Midi Channel 7. Using two different Sequences, the independent triggering of both

Downloaded from www.Manualslib.com manuals search engine

inputs allows the creation of very complex Gater effects.

The menu pages 6-26 contain all the parameters, which are also provided by the BASS-LEAD-SYNTHESIZER section. After installation of the Audio Expansion you lose access to the parameters on pages 6, 19, 20 and 24. To make these parameters functional you will also need to install the Synthesizer Expansion card (available soon!).

Double clicking the F3 button calls up this display:

```
Edit Ext1 & Ext2
|1> MixLevel:100
```

In principle everything in this menu functions in the same fashion as in the EDIT menus for the outputs 1 and 2. The difference is that this menu has the additional feature of a Stereo mode, which allows you to operate both inputs simultaneously. The only change is in the Parameter "Pan". The factory preset provides for the stereo signal of an external sound source to be automatically routed to the stereo-outputs of the 309. This means the stereo signal is being maintained. When you change the parameter "Pan" in this menu, the panning of Ext 1 and Ext 2 is being changed concurrently in opposite directions. This means Ext 1 and Ext 2 assume always opposing panning values i.e. R>60 for Ext 1 & Ext 2 results in R>60 for Ext1 and L<60 for Ext2.

Assignement of individual Outputs::

The feature especially valued by Professionals in an instrument like the 309 are additional Outputs. The 309 Audio Expansion provides 2 additional ones. Using those you can send the sound of a section "dry" to a channel on your Mixer. "Dry" means that the sound of the individual out cannot be treated with the internal effects of the 309. Individual Outputs are best utilized to treat a specific sound of the Synthesizer or the drum computer with external effect units. As the Individual outputs of the 309 are polyphonic, it is also possible to assign 2 or more sections (for instance Snare and HiHat) to one Individual Out. To assign an instrument to an individual output, go to the Mix menu of the according section (in our example KICK). Select page 3 using the EDIT-VALUE Dial, which contains the Parameter "Pan":

```
Edit Mix T: Kick
<3> Pan:      >C<
```

Turning the EDIT-VALUE Dial fully to the right makes OUT4 appear:

```
Edit Mix T: Kick
<3> Pan:     OUT4
```


Downloaded from www.Manualslib.com manuals search engine

Now the Kick is only sent out via OUT4. Turning back the EDIT VALUE Dial one step, you will see OUT 3. Once an instrument has been assigned to one of the individual outs, this assignment is maintained even after a pattern or song change. It is not necessary to store the selection you made.
By turning back the EDIT VALUE Dial one more step you reach OUT1 (RIGHT). OUT1 only outputs the sound on the right channel of the stereo sum. When panning the instrument all the way left, the sound is being sent out only via OUT2 (LEFT) of the 309. This way it is possible to use the stereo sum of the 309 as well as (togetherwith) two additional individual outputs. It is important though to have the FX-Sends of the instruments routed through OUT 1 and 2 set to 0, as the effects signal is always routed in equal proportion to the stereo sum.

New functions of the WRITE-Menu:

With this Upgrade 2.0 the operating system for the 309 is being augmented by four new functions.
You will find the first one on page 10 of the WRITE menu:

```
  <10> Send All?
[Ok]
```

When confirming this function with the F1 button, all of the data stored in the buffer (sounds, user-motifs and songs) will be sent to Midi-Out.

On page 11 of the WRITE Menu you' ll find another new function:

```
  <11> Copy Motif?
[Ok]
```

This function allows you to copy user motifs and to store them on a different memory location. The copy function is particularly useful, to create variations of an already existing motif. Push [ok] to initiate the copying process. The display will show:

```
Copy  Kick-Mtf 0
  [ok]  [cancel]
```

On this page you can select the motif you' d like to copy. The selection is made via the EDIT VALUE Dial. Using the select buttons you can also select the instrument section you' d like to copy a motif from. Once you have selected the motif to be copied confirm [ok]. Using [cancel] you can abort the copying process. Once you have selected [ok] you will see the following display message:

Downloaded from www.Manualslib.com manuals search engine

```
to  Kick-Motif 0
  [ok]  [cancel]
```

Now you can select the memory location to which you' d like to copy the motif to. Empty storage locations are indicated via a little star in the display:

```
to  Kick*Motif 1
  [ok]  [cancel]
```

Once you confirm [ok] the motif is being stored in the new location. Using [cancel] you can stop the copying process. It is also possible to copy Motifs from one section to another (i.e. Kick to Hi Hat).

The third functions can be found on page 12:

```
  <12> Clear Seq?
[Ok]
```

When pushing [ok] you will be asked to confirm once more:

```
Clear Seq, Sure?
  [ok] [cancel]
```

If you confirm by pushing the F1 button, all songs, user motifs and user patters will be erased! Sounds created by you will not be affected by this function. Selecting [cancel] will abort the erasing process.

The final new function can be found on page 13 of the WRITE menu:

```
  <13> Init Ext?
[Ok]
```

Confirming [ok], the Mix and Sound parameters of the Audio inputs are being reset to factory settings (throughput of a stereo-signal without triggering).

New Sequencer functions:

We have used the systems upgrade 2.0 to implement a few changes, which will improve the sequencer. They are:

Downloaded from www.Manualslib.com manuals search engine

Realtime-Loop-Recording:

The most important innovation can be found in the Drumgrid. You' d best try this new function with a completely initialized pattern (Init Patt. on page 5 of the Write Menu). Go to the Edit-Pattern-Menu and call up the Drumgrid. The first new feature is that you are able to access the different sections via the SELECT button without leaving the drum grid. This is very practical and time saving. The clincher though is the new Real-time-Loop-Record-Mode. You can use this function by pushing the RECORD button when the DRUMGRID is open. Now you can program a new rhythm pattern in real-time using the keypad-buttons. Contrary to the conventional realtime-recording here the pattern is looped, enabling you to make the real-time recording in multiple passes. Additionally the realtime-recording is always automatically being quantized. The newly added notes are immediately being displayed in the Drumgrid.

Push the RECORD button just once to return from Realtime-Loop-Record Mode to the normal Drumgrid mode. You will realize very quickly that this new combination of Drumgrid programming and real-time recording can lead to new and creative results.

Song-Position-Pointer (SPP):

At the special request of many 309 owners, especially fans of external synchronization, the 309 is now able to receive Song-Position-Pointer (SPP) information. SPP is additional information contained in Midi-Clock. It makes it unnecessary to always have to start at the beginning of the song to start synchronization when using the 309 as a slave of an external sequencer.

Trackmode Internal and External (I+E):

In the Mix-Menu on page 6 you will find a new setting for the parameter "Trackmode".

```
Edit Mix T: Kick
<6| TrckMode:I+E
```

Up until now you had to select whether the internal sequencer of the 309 should output the currently selected instrument section (Mode=INT) or addresses a selected external Midi Instrument via MIDI-Out (Mode=EXT). Now, with the selection of I+E you have the option of using both options simultaneously.

Downloaded from www.Manualslib.com manuals search engine

DEALER

DISTRIBUTOR

Downloaded from www.Manualslib.com manuals search engine

Congratulations on the purchase of the Synth-Expansion. This package will increase the functionality of your RAVE-O-LUTION 309 tremendously. The following new features are at your disposal after installation:

- 36 new waveforms including noise.
- 2 new filter algorithms: 12 dB Highpass and 12 dB Lowpass.

In combination with installed Audio-Expansion:
- New filters also for treatment of external signals.
- Oscillator parameters (Wave/Tune/Glide) for Ext1/2.
- 2 additional monophonic synthesizers (with MIDI-control).

Before you can start taking advantage of these new functions, you will have to install the Synth-Expansion. Please adhere to the installation procedures described in this manual. If you don't understand any of the explanations of the new functions we recommend consulting your authorized QUASIMIDI-dealer or the QUASIMIDI-distributor for your country.

Installationguide:
Included in the package, besides this installationguide, are the following items:

- 1 board with the Synth-Expansion.
- 1 IC with the new operating system on antistatic foam.
- 1 IC removing tool.

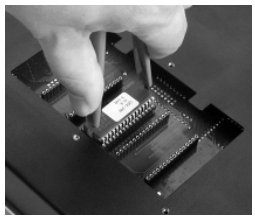
Check to see if all the items listed above are included in the package. In addition to the above listed tool you will just need a Phillips screwdriver.

ATTENTION: BEFORE DOING ANYTHING, BACK-UP ANY VALUABLE USER-MOTIFS, SOUND- AND SONG-DATA, BECAUSE THIS PROCEDURE REQUIRES REINITIALIZATION OF THE 309'S MEMORY.

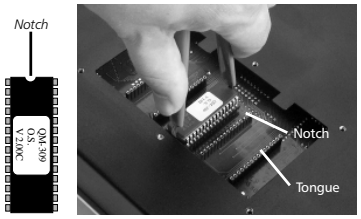
IMPORTANT: The included IC and expansion-board are sensitive to electrostatic charges. This procedure requires that you periodically "ground" yourself, by touching a grounded object such as a water pipe or a grounded piece of equipment. Grounding yourself prevents the static charge in your body from damaging the sensitive IC and expansion-board.

Installation of the operating system IC:
a.) To start installation, be sure to disconnect the AC-adaptor.
b.) Place the 309 with the bottom side up on a soft cloth. To place the 309 in a safe position it is better to use the styrofoam of the shipping box.
c.) Remove the six screws of the small bottom plate.
d.) Here you see three IC-sockets. The IC you have to change is located in the middle.

e.) Using the IC-tool, remove the chip. To remove the IC from the socket, place the IC-tool at the both ends of the IC. Pull carefully, alternating from the left and right sides, and remove the chip.

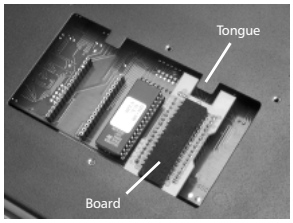


Don't forget to "ground" yourself before you insert the new IC. Insert the the new IC on the socket without pressing. **Pay attention to the polarity of the IC indicated by the notch.**
The new IC has to be inserted with the notch oriented towards the tongues of the 309's body (see picture). Make also sure that all the IC's pins fit the socket.



Now press the IC into the socket gently, then double-check the polarity and the positions of all the pins a second time. If everything is OK, carefully press the IC into the socket until fully seated.

Installation of the Synth-Expansion board:
The installation of the Synth-Expansion board is easier than the installation of the operating system IC. The design of the board makes it nearly impossible to insert it in the wrong direction.
The following picture will help you for orientation:



Before you insert the expansion-board you should "ground" yourself one more time to prevent electrostatic charge in your body.
The Synth-Expansion-Board can be installed left or right of the operating system IC. At first insert the board into the socket without pressing and check if the pins fit the socket. If everything is OK, carefully press the expansion-board into the socket until fully seated. This procedure also needs a little bit of fine feeling to prevent damages of your equipment.

The last step of the installation consists in screwing the small bottom plate onto the 309 body and to initialize the instrument (see next page).

Initialization of the 309:
After changing the operating system of the 309 it is necessary to initialize the instrument. Otherwise the Synth-Expansion will not be recognized.
With the 309 turned off, press and hold the WRITE-button of the 309 while you switch the power on. The display will show: "INITIALIZE ALL?". To confirm this message press button F1. Don't worry, this may take some seconds and the progression is indicated by a meter in the display. If the Synth-Expansion is installed properly, from now on the display will show the message "Expanded S" after turning on the 309.

How to get a first impression of the sound?
We are sure that now you want to listen to some new sounds to evaluate the new possibilities of the Synth-Expansion. To do this, start any pattern and mute all the tracks except the BASS/LEAD-Synthesizer. Now, hold the SELECT button down and turn the EDIT/VALUE wheel to chose a sound beyond soundnumber 127. There are 32 new sound examples in the expanded 309 located in between the soundnumbers 128 and 159.
Important!
After the installation of the expansion, the 309 doesn't have more RAM memory locations than before! If you want to employ one of the new sounds in a pattern, you have to save it first on one of the regular soundnumbers between 0 and 127. The patterns can only call up sounds from 0 to 127!

How to reach the new oscillator models?
The Synth-Expansion features 37 new waveforms based on new oscillator models. These waveforms are automatically located behind the waveforms of the regular version of the 309. The Synth-Expansion provides oscillator models with up to four oscillators. The following list shows the several new waveforms and indicates their numbers of oscillators:

Spectra1	1	TB303_a1	1
Spectra2	2	TB303_a2	2
Spectrb1	1	TB303_b1	1
Spectrb2	2	TB303_b2	2
Spectrc1	1	TB303_c1	1
Spectrc2	2	TB303_c2	2
Spectrd1	1	Major_Ch	3
Spectrd2	2	Minor_Ch	3
Spectre1	1	5th8thCh	3
Spectre2	2	MajorMin	3
Spectrf1	1	MinorAdd	4
Spectrf2	2	MinorMin	3
Spectrg1	1	MajorCh2	3
Spectrg2	2	MinorCh2	3
Spectrh1	1	5th8thC2	3
Spectrh2	2	MajorMn2	3
Spectri1	1	MinorAd2	4
Spectri2	2	MinorMn2	3

How to find the new filter algorithms?
With the Synth-Expansion, the BASS/LEAD-Synthesizer is enhanced by two new filter algorithms: the 12 dB Lowpass and the 12 dB Highpass filter. For selecting the new filters, a new menu page appears in the edit-sound menu. Press the SELECT button of the BASS/LEAD-Synthesizer and select the last page in the edit-sound menu. You will see the following menu in the display:

```
Edit Bass-Sound
<23| VCFTyp:LP24
```

Here you can select the different filter algorithms.

How to sync the LFO with the sequencer?
A superb feature for sound design is a filter-, pitch- or volume modulation that automatically adjusts to the speed of your groove. To chose this feature, select the parameter "LFORat:" on page 17 of the edit-sound menu. After the value of 120 the display will show you the different available sync-rates: 1/16, 1/8, 1/4, 1/2 and 1/1. These values indicate the resolution of the LFO-rate within on measure. If you have selected one of these values and you change the tempo of the sequencer, the rate of the LFO will follow.

New features in combination with the Audio-Expansion:
If you have installed an Audio-Expansion in addition to the Synth-Expansion, your 309 will have three identical BASS/LEAD-Synthesizers. The two additional synthesizers can be played via MIDI or triggered with the internal sequencer of the 309. The general handling of the additional synthesizers is explained in the manual of the Audio-Expansion. You will find all the necessary information in the chapter "Editing the Input Sections". The new parameters introduced by the Synth-Expansion will be explained in the following two paragraphs.

How to control the two synthesizers via MIDI?
Once the RAVE-O-LUTION has been initialized, the MIDI system channel is channel 1. Accordingly the two additional Synths can be played on channels 6 and 7. To do this, you just have to set up the oscillators for the two sections instead of the external inputs.
Open the edit menu of the first additional synth located on MIDI channel 6 by double clicking the F1 button under the display. You will see the following menu in the display:

```
Edit Ext1-Sound
<6> Wav:    ___
```

Press the PAGE buttons to select menu page 5:

```
Edit Mix T: Ext1
<5> Trigg: NoTrg
```

Modify the parameter for triggering (Trigg:) and set it to MIDI:

```
Edit Mix T: Ext1
<5> Trigg: MIDI
```

If you now go back to page 6, the parameter "Wave" allows you to select all the waveforms of the BASS/LEAD-Synthesizer. The parameters "Glide" and "Tune" are now also appearing in the edit menu of the two additional synthesizer units. If you want to go back to edit external audio-signals, you have to select "In1" instead of a waveform. It is only with "In1" selected that you can go back from MIDI-triggering to the "No Trigger" setting. On menu page <0> you have the option to select all the the sound-programs of the BASS/LEAD-Synthesizer for use with the two additional synths. Of course, the selection can also be made via MIDI-program changes. All the parameters of the two additional synthesizers can be modified via MIDI-controllers. You can find the listing of the 309's MIDI-controllers on page 23 of your 309 manual.

How to double the BASS/LEAD-Synthesizer with the additional synths?
If you have done all the settings until this point, you just need to switch the triggering parameter on page 5 to "Bass". From now on the selected synthesizer will play along with the 309's Bass-track!

Downloaded from www.Manualslib.com manuals search engine

Installationguide Drum&Percussion-Expansion

Congratulations on the purchase of the Drum&Percussion-Expansion. This package will increase the functionality of your RAVE-O-LUTION 309 tremendously. The following new features are at your disposal after installation:

- 128 memory locations for each section.
- 20 Percussion-sets.
- 128 new Percussion-Instruments.
- 32 new waveforms for Kick, Snare and Hihat.
- 38 new patterns.
- LFOs now for each drumsection.

Before you can start taking advantage of these new functions, you will have to install the Drum-Expansion. Please adhere to the installation procedures described in this manual. If you don't understand any of the explanations of the new functions we recommend consulting your authorized QUASIMIDI-dealer or the QUASIMIDI-distributor for your country.

Installationguide:
Included in the package, besides this installationguide, are the following items:

- 1 board with the Drum-Expansion.
- 1 IC with the new operating system on antistatic foam.
- 1 IC removing tool.

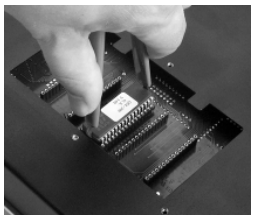
Check to see if all the items listed above are included in the package. In addition to the above listed tool you will just need a Phillips screwdriver.

ATTENTION: BEFORE DOING ANYTHING, BACK-UP ANY VALUABLE USER-MOTIFS, SOUND- AND SONG-DATA, BECAUSE THIS PROCEDURE REQUIRES REINITIALIZATION OF THE 309'S MEMORY.

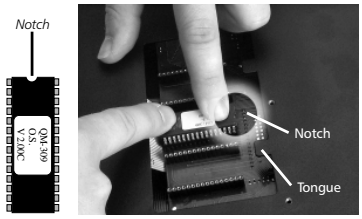
IMPORTANT: The included IC and expansion-board are sensitive to electrostatic charges. This procedure requires that you periodically "ground" yourself, by touching a grounded object such as a water pipe or a grounded piece of equipment. Grounding yourself prevents the static charge in your body from damaging the sensitive IC and expansion-board.

Installation of the operating system IC:
a.) To start installation, be sure to disconnect the AC-adaptor.
b.) Place the 309 with the bottom side up on a soft cloth. To place the 309 in a safe position it is better to use the styrofoam of the shipping box.
c.) Remove the six screws of the small bottom plate.
d.) Here you see three IC-sockets. The IC you have to change is located in the middle.

e.) Using the IC-tool, remove the chip. To remove the IC from the socket, place the IC-tool at the both ends of the IC. Pull carefully, alternating from the left and right sides, and remove the chip.

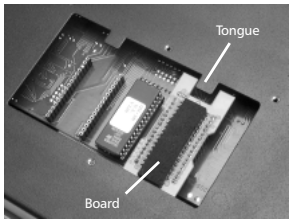


Don't forget to "ground" yourself before you insert the new IC. Insert the the new IC on the socket without pressing. **Pay attention to the polarity of the IC indicated by the notch.**
The new IC has to be inserted with the notch oriented towards the tongues of the 309's body (see picture). Make also sure that all the IC's pins fit the socket.



Now press the IC into the socket gently, then double-check the polarity and the positions of all the pins a second time. If everything is OK, carefully press the IC into the socket until fully seated.

Installation of the Drum-Expansion board:
The installation of the Drum-Expansion board is easier than the installation of the operating system IC. The design of the board makes it nearly impossible to insert it in the wrong direction.
The following picture will help you for orientation:



Before you insert the expansion-board you should "ground" yourself one more time to prevent electrostatic charge in your body.
The Drum-Expansion-Board can be installed left or right of the operating system IC. At first insert the board into the socket without pressing and check if the pins fit the socket. If everything is OK, carefully press the expansion-board into the socket until fully seated. This procedure also needs a little bit of fine feeling to prevent damages of your equipment.

The last step of the installation consists in screwing the small bottom plate onto the 309 body and to initialize the instrument (see next page).

Drum&Percussion-Expansion: New features and soundlist

Initialization of the 309:
After changing the operating system of the 309 it is necessary to initialize the instrument. Otherwise the Drum-Expansion will not be recognized.
With the 309 turned off, press and hold the WRITE-button of the 309 while you switch the power on. The display will show: "INITIALIZE ALL?". To confirm this message press button F1. Don't worry, this may take some seconds and the progression is indicated by a meter in the display. If the Drum-Expansion is installed properly, from now on the display will show the message "Expanded D" after turning on the 309.

Drums with LFO:
The drum-sections KICK, SNARE and HIHAT and the PERCUSSION-section now have each their own LFO (Low Frequency Oscillator). You will find it in the sound-edit menus of each section upwards page 16. The LFO can affect the pitch (VCO, not in the PERCUSSION-sets), the filter (VCF) and the volume of a sound with adjustable Rate and Depth. The LFO gives you the possibility to create interesting modulation effects within a pattern (eg random pitch on a hihat or opening and closing filter on a snare). As an example you can listen to the HIHAT-motif in Pattern 20. In this case, the LFO modulates the pitch of the HIHAT-sound. The descending character of this motif is caused by the selected LFO-waveform (Saw-Down, SWD).
An other new feature of the Drum-Expansion is the possibility to sync the LFOs of each section to the tempo of the sequencer. The synchronisation of the LFOs can be set up with the parameter "LFORat:" in the sound-edit menu on page 17. After the value of 120 the display will show you the different available sync-rates: 1/16, 1/8, 1/4, 1/2 and 1/1. These values indicate the resolution of the LFO-rate within on measure. The display shows the following content:

```
Edit  Bass-Sound
<17> LFORate:1/16
```

If you select another sync-rate in this edit-page, you have to restart the sequencer to set up the synchronisation.

Melodies with the Percussion-Set:
By listening attentively to the new percussion-sounds, you will discover that the choice is enlarged by a lot of synthesizer waveforms (eg 303Bass1 or MixChrd3). If you program a percussion-set by using the same waveform differently tuned for each pad, you will be able to play an additional synthesizer voice like a bassline with the PERCUSSION-section. We prepared this for you in Set 11. Open the sound-edit menu of the PERCUSSION-section and select Set 11. You can now play a melody using the keyboard pads.

More memory locations:
With the installation of the Drum-Expansion, the number of the memory locations for KICK-, SNARE-, HIHAT- and PERCUSSION-sounds is increased to 128. The new factory sounds are located on the memory location numbers upwards 64.

New Patterns:
To demonstrate the new sounds in a musical context, the Drum-Expansion features 38 new patterns. After the initialization of the 309, the new patterns are located on the pattern numbers P01 to P38. In the pattern-select level of the edit-pattern menu, the new patterns are directly following the ROM-patterns.

The following list gives you an overview of the new waveforms and samples featured by the Drum-Expansion:

Kick-Drums:

MassKick
MoogBDrm
Mod_Dyn1
Mod_Dyn2
Mod_Dyn3
Mod_Dyn6
Mod_Dyn7
BD_Shot1
PDisKiK1
PDisKiK2
PDisKiK3
PDisKiK4
DisKiK5
PDisKiK6

Snare-Drums:

MogSnare
PicSnare
MoogZap1
MoogZap2
MoogZap3
Mod_Dyn4
Mod_Dyn5
Pit_Ind
Modulo
Modulo2
Modulo3

HiHats:

NewHiHat
TambHHat
808HH_HP *
606HH_HP *
909HH_HP *
NewHH_HP *
NatHH_HP *
MS_HH_HP *

Percussion-Instruments

128:P_Disk1F
129:P_Disk2F
130:P_Disk3F
131:P_Disk4F
132:P_Disk5F
133:P_Disk6F
134:LFO
135:MoogSnar
136:MoogBD_2
137:D_Kick1F
138:D_Kick2F
139:D_Kick3F
140:D_Kick4F
141:D_Kick5F
142:MoogZap1
143:MoogZap2
144:MoogZap3
145:PicSnare
146:TambBack
147:Tamb_For
148:TambShor
149:WoodBlck
150:909opHH2
151:KWEfekt2
152:KWEffekt
153:KW_Kwak1
154:KW_Kwak3
155:MasKick2
156:Modulo_1
157:Modulo_2
158:Modulo_3
159:MogPerc1
160:MogPerc2
161:MogPerc3
162:MogPerc4
163:HH2_Open
164:ModDyn_1
165:ModDyn_2
166:ModDyn_3
167:ModDyn_4
168:ModDyn_5
169:ModDyn_6
170:ModDyn_7
171:Moog_BD1
172:El_HiTom
173:El_LoTom
174:PitIndus
175:PitSnare
176:PitSnar2
177:Pit_Cymb
178:PitSnar3
179:Pit606Sn
180:Pit808S1
181:Pit808S2
182:Pit808S3
183:Pit909S1
184:PitDryS1
185:PitSnar1
186:PitSnar2
187:PitSnar3
188:PitUdus1
189:PitUdus2
190:PitUdus3
191:PitUdus4
192:KWPitch1
193:KWPitch2
194:KWPitch3
195:KWPitch4
196:KWPitch5
197:KWPitch6
198:KWPitch7
199:KWPitch8
200:KWPitch9
201:KWPitchX
202:Lopmatic
203:LopBrick
204:LopShake
205:LoopSnap
206:LoopClap
207:Resofect
208:Resofec2
209:PtchChrd
210:RightHer
211:Come_On
212:Get_Up
213:GoHoo
214:Hahh
215:Hoohh
216:Housy
217:Oh_Yeah
218:303Bass1
219:303Bass2
220:HardMKS
221:StabSntF
222:TekChrd1
223:TekChrd2
224:TekChrd3
225:TekChrd4
226:TekChrd5
227:TekChrd6
228:TekChrd7
229:TekChrd8
230:TekChrd9
231:MixChrd1
232:MixChrd2
233:MixChrd3
234:MixChrd4
235:MixChrd5
236:Chord_1
237:Chord_2
238:MKSChrd1
239:MKSChrd2
240:MKSChrd3
241:SineBass
242:Rev_Ride
243:Rev_OpHH
244:Rev_909R
245:Rev_Hous
246:Rev_HH2O
247:Rev_Revb
248:Rev_MS20
249:Rev_NOHH
250:Rev_Yeah
251:RevRide2
252:RevRight
253:RevRigt2
254:RevFlang
255:RevCrash

The Hihat-waveforms marked with a * use a **12 dB Highpass filter** instead of the 24 dB Lowpass. This filter gives you the possibility to program Hihat-sounds with increased high frequency which will stand out of your mix.

Remark: A lot of the new waveforms (eg Mod_Dyn6) have a very long release time. You can adjust it with the parameters DECAY and RELEASE. If the DECAY and RELEASE values are high, a sound based on those waveforms might release within the next pattern after a pattern change.

Downloaded from www.Manualslib.com manuals search engine