AIRBase99 Manual

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Introduction

The AiRBase 99 is more than just another drum machine. It is capable of bridging the gap that seperates purely percussive i.e. noisy, non-tonal sounds from tuned tonal sounds.

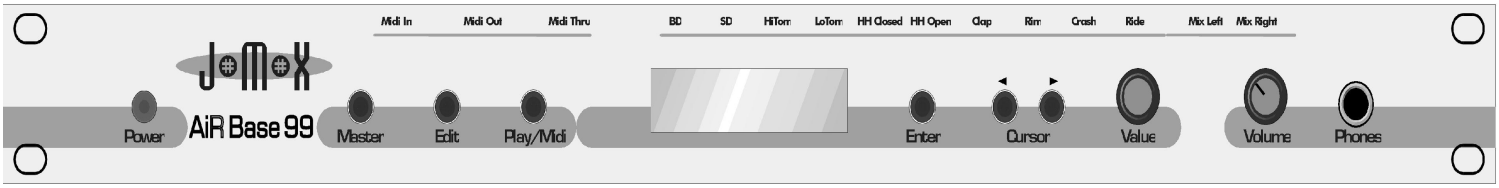
Bass Drum, Snare Drum, Lo Tom and Hi Tom of the AirBase99 are fully analog. This means that the AiRBase 99's instrumentsare not based on sampled sounds but feature true analog soundgeneration
The instruments HiHat, Clap, Rim Shot, Crash and Ride are based on 8-bit quantized samples that are processed by analog envelopes and have an awesome sonic performance. In addition to the well-known TR909 samples that are also used in the XBase09, there are further samples taken from the most prominent instruments of the legendary Drumcomputers TR808 and CR78, as well as a sample-set with natural percussion sounds called JMX. Each sample is processed by an envelope generator that adds an enormous amount of punch.

In order to preserve the "analogness" of sound generation as well as of sound control, all parameters are controlled by specially adapted and discretely built-up digital-to-analog converters. This measure requires extra hardware, but enables practically immediate response to control changes. Great care has been taken to preserve the analog feel of control voltages in the AiRBase 99's MIDI control of sound parameters. For most parameters, the range of control has been greatly increased.

As all sound parameters of the AirBase99 can be edited, it is, on the one hand, possible to imitate the above-named drumcomputers or, on the other hand, to create completely new drum Kits. From Elektro to Jazz-Sound - everything is possible.

Control Panel

Front Panel View



On/Off Master Edit Play/Midi LCD-Display Enter Cursor L/R Value Volume Phones

Power Switches the AiRBase 99 on and off

Master selects the 'master' operating mode

Edit selects the 'edit' operating mode

Play/Midi triggers instruments or selects the 'midi' menu.

Display 2x16 character backlit display

Enter serves to confirm certain settings

Cursor <- The left cursor button moves the cursor to the left of the display.

Cursor -> The right cursor button moves moves the cursor to the right of the display

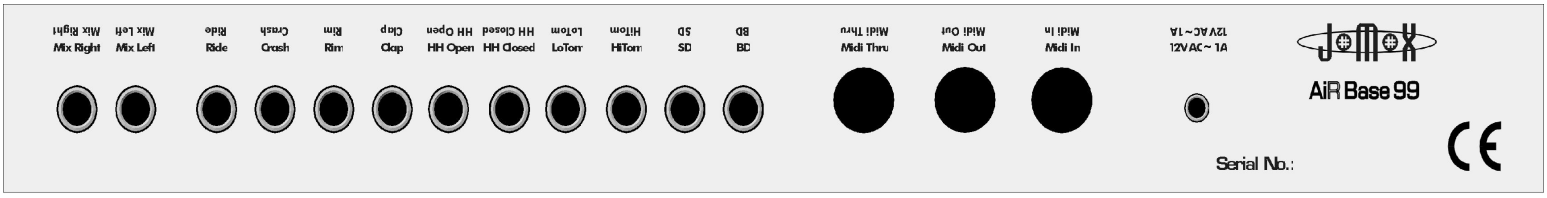
Value The 'value' knob changes the value of the parameter shown in the display.

Volume The 'Phones Volume' knob controls nothing but the volume level of the headphone output.

Phones Stereo headphones can be connected with a ¼ inch stereo jack plug.

Connections

Back Panel View



Mix/L Mix/R individual outputs Midi Thru, Out, In 12 V AC in

12 V AC in
Power supply input socket.

MIDI IN,OUT and THRU
Midi connection sockets

BD, SD, LoTom, HiTom, cl.HH, op.HH, Clap, Rim, Crash, Ride
Individual outputs for each instrument

Mix
Stereo audio output

2. Connecting the Unit

Before making any connections, switch the AiRBase 99 and all the devices involved off.
Power Supply
Connect the power supply unit that was shipped with the AiRBase 99 to a power outlet and connect it to the **12 V AC IN** socket on the AiRBase 99. If for any reason you are not using the original power adapter, make sure you are using a 12 V AC power supply unit with at least 1.5 A. **Never** use an AC/DC adapter, because this could damage the AiRBase 99.
2.3 Audio Connections

Switch off the AiRBase 99 and the mixer/amplifier you want to connect it to.
The AiRBase 99 has a Stereo-MIX output which outputs the audio signal of all instruments as long as there is no cable plugged into one of the individual outputs.

The left and right channel of the Stereo-Mix signal is out on the MIX/L and MIX/R jack sockets.

If you want to connect the AiRBase 99 to a mono mixer channel, use the MIX/L output .

The AiRBase 99 has ten individual outputs for bass drum, snare drum, hihat etc.. As soon as a cable is plugged into an individual output, that instrument will no longer be played through the Stereo-MIX output.
Connect the audio outputs you want to use to your mixer with ¼" monojack plug cables.

The AiRBase 99 has a ¼" stereo headphone output jack socket on the front panel, which outputs the stereo mix.

MIDI - Connections

MIDI-IN

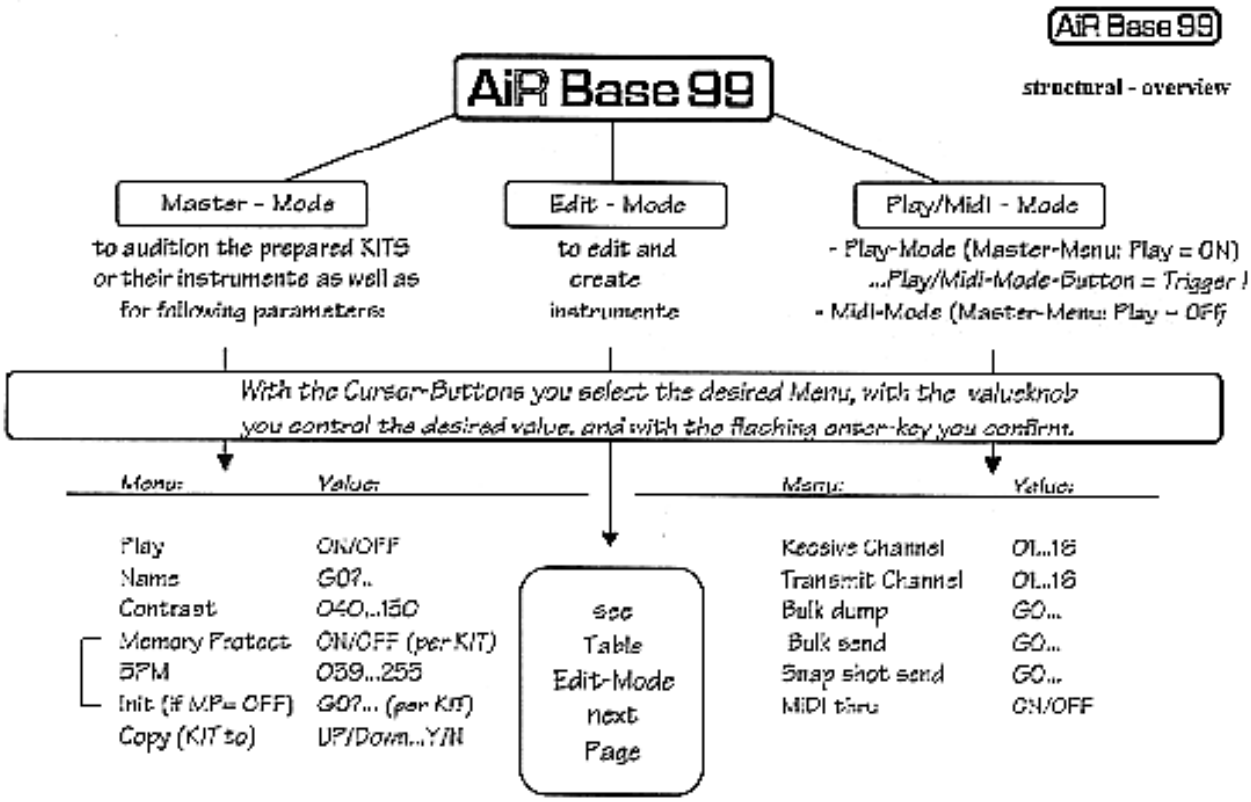
The AiRBase 99 can be controlled by various MIDI devices such as master keyboards, computers and sequencers via the MIDI In port.
Connect the AiRBase 99's MIDI-In port with the MIDI-Out port of the controlling device.
Please note: All incoming MIDI messages have to be processed by the AiRBase 99, even if only to check their MIDI channel., which will cost a bit of computing time. This means that the AiRBase 99 might be unnecessarily processing data, even if nothing appears to be happening. If you are not using a MIDI data filter, the amount of data can be considerable. If you are able to filter MIDI data such as MIDI time code and aftertouch controllers for example, we advise you do to so, since this type of data is not used by the AiRBase 99

MIDI-OUT

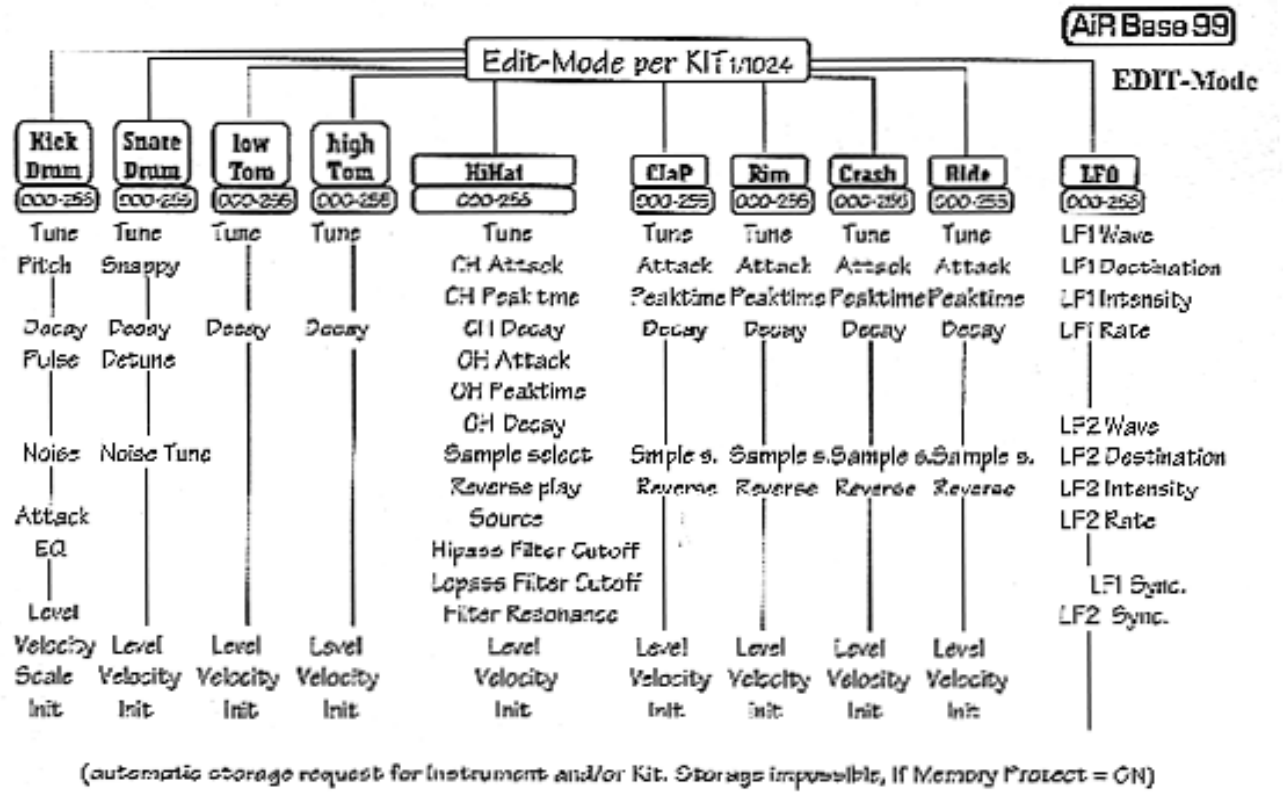
The AiRBase 99 can transmit data to devices such as computers and sequencers via its MIDI-Out port. Connect the AiRBase 99's MIDI-Out port to the receiving device's MIDI-In port.

MIDI-THRU
MIDI data that the AiRBase 99 receives at its MIDI-In port is passed directly throught to the MIDI-Thru port. You can connect further MIDI devices via the MIDI-Thru port.

Structural - Overview

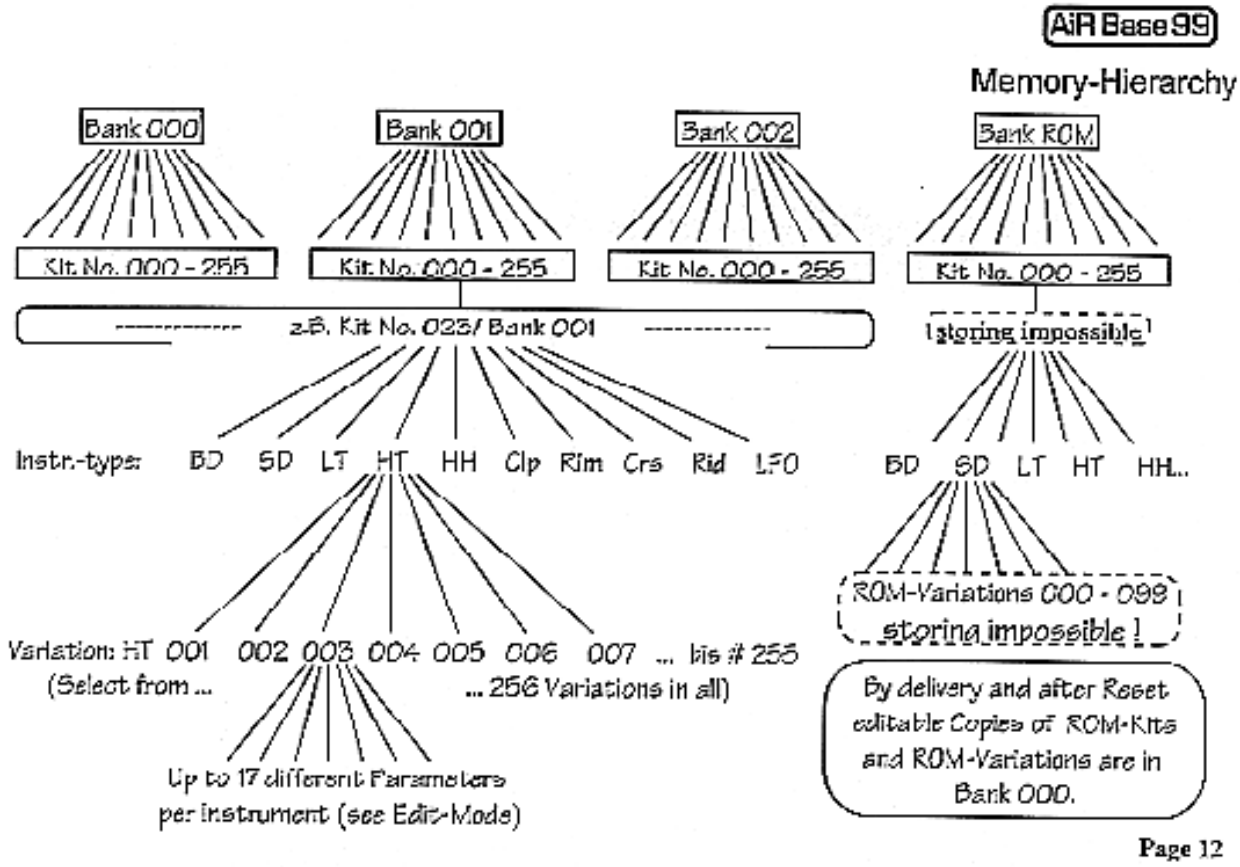


Edit-Mode



(automatic storage request for instrument and/or Kit. Storage impossible, if Memory Protect = ON)

Memory-Hirachy



Master-Mode :

In Master mode you can select drum kits, give drum kits names - and make various global settings.
Master mode is active by default and the Master button is lit after you switch the AiRBase 99 on.
If another mode is active, press the master butten to switch to the Master mode and the butten will light up.

Selecting Kits
The upper line of the display shows the name of the currently active kit. Next to that, the currently active play instrument is displayed (see also Play ON/OFF).
The second line shows the corresponding kit number and bank number. You select kits by turning the value knob. Kit names and numbers will change accordingly.
The bank number changes automatically, as soon as the kit number is greater than 255. In this case, the kit number will change to 000 and the bank number will increase by 1.

Instrument type <Kick,Snar,LoTo....>
To select an instrument type, move the cursor one step to the right. If the play function is active (see also Play ON/OFF), the individual instruments of the selected kit can be selected with the value knob and triggered with the Play/Midi button. In this way it is possible to audition kits without the use of a keyboard. The instrument numbers cannot be changed here, because they are already assigned to the kits (see also Edit Mode - instrument number).

Play-button function <Play> <ON/OFF>
Press the right cursor button again to get to the next parameter of Master mode.
ON - The play function is active. In Master and Edit modes the Play/Midi button is used only to trigger the currently selected instrument.
OFF - The Play function is disabled. The Play/Midi button now serves to select MIDI Mode.

Name Edit <Name> <GO>
Use Name edit to give a kit a name. After selecting this parameter, the ENTER button will start blinking. If you want to change the name in the display's upper left corner, hit the ENTER button.

*If you **do not** want to change the name, pressing the right cursor button again will take you to the next Master Mode parameter.*

The cursor is now under the first letter of the kit name. Use the value knob to set the desired letter. Move from letter to letter´with the left and right cursor buttons. When you have finished naming the kit, hit Enter to store your edit. AiRBase 99 will confirm this by displaying „Drum Kit stored".
After this, the cursor will be back at the drum kit selection parameter.

The AiRBase 99 will point out that the Memory Protect function , is active by displaying „Memory Protect!" The new name cannotbe stored. After the storing process has been aborted, the cursor will be in the kit selection parameter.
If you do not wish to change the kit name, use the cursor buttons to select a different Master Mode parameter.

Contrast <Contr> <030-110>
move the cursor to the contrast parameter. Here you can adjust the LCD display's contrast.

Memory Protect <MemPr> <ON/OFF>
Move the cursor to the Memory Protect parameter.

ON - The selected drum kit is protected. Changes in the kit name, its instruments and instrument names cannot be stored to memory. Should another kit use the same instrument numbers as the protected kit, sound parameter changes, that affect those instrument numbers will not be taken over.
All changes made to non protected kits can only be stored as long as they do not affect protected kits. Protected kits can be identified by the high colon (full stop) in their kit name.

OFF - The selected kit is not memory protected. Please note that sound parameter changes of an instrument number affect all kits that use that instrument number.!
Example: The kits numbered 000, 001 and 002 of bank 001 all use the kick drum instrument number 001 (instrument variation 001 of the instrument „kick"). If the sound parameter of Kick001 are changed, this will affect all the abovementioned kits! If, however, only one of these kits is memory protected, parameter changes of Kick001 cannot be stored to memory, even if these changes are made from a non-memory protected kit.

LFO Speed <BPM> <038-255>
Here you can adjust the basic speed of the two LFOs (modulators). LFO speed is given in beats per minute (BPM).. In this wise, it is possible to adjust the LFO speed for every kit to fit the tempo of the current composition (see also „LFOs" in Edit Mode).

Initialising Kits <Init> <GO>
As soon as this parameter is selected, the ENTER button will start blinking.

If you want to abort this function, press one of the cursor buttons. to select a previous or a following Master Mode parameter.
The ENTER button will then stop blinking.

Initialisation will assign a kit with the instrument numbers corresponding to its kit number. The kit „untitled" stored in kit number 039, for example, will be assigned the instrument numbers 039. The kit will then consist of kick drum 039, snare 039, LoTom 039 etc..
It is however possible to assign any instrument number to a kit. Hit Enter to initialize the selected kit.

The display will read „Are you sure? NO".
Hit Enter to abort the initialization process**.**

If you are sure that you want to initialize the kit, turn the value knob
clockwise, until the display reads „YES" instead of „NO".
Hit Enter to initialize the selected kit.

If the kit is memory protected, the display will read:
„Memory protect!".

Copying kits <CpyTo> <000-255>
This function lets you copy kits with all the instruments used by that kit. The instrument variations of the source kit will then be stored under the the target kits number. -

Example: You want to copy kit number 001, named „untitled". This kit uses instrument numbers Kick 001, Snare 002, LoTo 010, HiTo 100, HiHat003, Rims 000, Clap 000, Crsh000, Ride000 and the LFO setting LFOs 000.
The target is kit 020. All instruments will now be copied to their respective memory number 020. Kick 001 is copied to Kick020, Snar002 is copied to Snar020, LoTo010 is copied to LoTo020, HiTo100 is copied to HiTo020, Clap000 is copied to Clap020, Rims000 is copied to Rims020, Crsh000 is copied to Crsh020, Ride000 is copied to Ride020, HiHa003 is copied to HiHa020, LFOs000 is copied to LFOs020.

Use the value knob to select the target kit number.
The taregt kits name will be displayed. While you are changing the target kit number, you can play the keyboard to audition the respective target kits an important kit. Press the Enter button to start the copy process. The display will read „Are you sure? NO".

Hit Enter to abort the copy process.
The display reads: Command aborted.

If you are sure you want to go through with the copying process, turn the Value knobclockwise until the display reads „YES" instead of „NO".
Hit Enter to copy the kit.

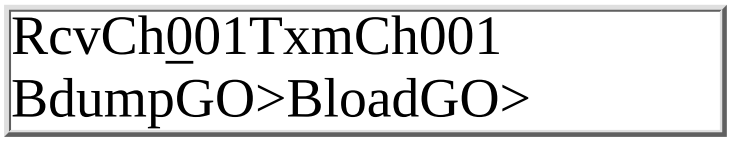
The display reads: „Drum Kit stored".

If the target kit is memory protected,
the display will read „Memory protect!" .

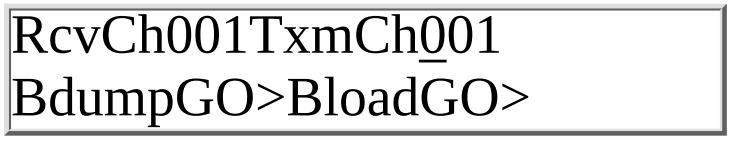
MIDI - Mode :

In Midi-Mode you can edit parameters important to Midi operation.
Press the Play/Midi button to activate Midi Mode.
The Play/Midi button will light up and the cursor will be positioned
on the first parameter of Midi - Mode.
Should the Play/Midi button not light up, check the play parameter in Master Mode.

Receive Channel <RcvCh> <001-016>
Here you set the channel on which you want the Airbase 99 to receive



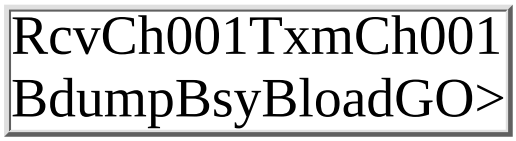
Transmit Channel <TxmCh> <001-016>
Here you set the channel on which you want the Airbase 99 to transmit Midi data.



Bulk Dump <Bdump> <GO>
This function serves to dump the complete memory contents of the Airbase 99 to an external Midi device. This device could be a computer, a sequencer, a Midi file player etc..-
The Airbase 99's MIDI Out port should be connected to the receiving device's MIDI In port. As soon as the bulk dump function is selected, the Enter button starts flashing.

To abort the bulk dump function, press one of the cursor buttons .Then
you can choose ather Midi functions. The Enter button will stop
flashing.

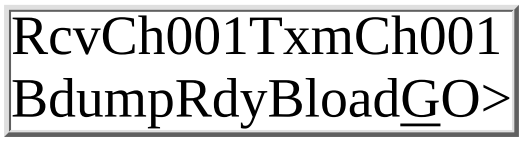
Set the receiving device to „receive ready" and press the Enter button. While data transmission is in progress, the display will read „Busy" After about 25 seconds the transmission will be completed.



After successful transmission the display will read „Fin".

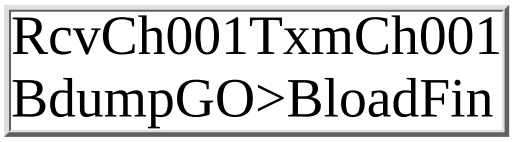
Bulk Load <Bload> <GO>
After selecting the Bulk Load function, the Enter button starts flashing. .

To abort the Bulk Load function, simply use the cursor buttons to select another Midi-Mode parameter. The Enter button stops flashing.



Press the Enter button to set the Airbase 99 to „receive ready". The display will read „Rdy". Start data transmission from the transmitting device (e.g. by starting the sequencer).

After successful data reception the display will read „Fin" (finished).

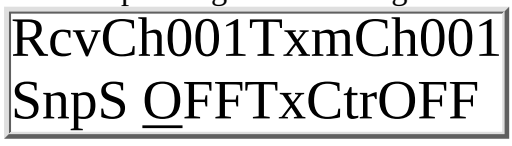


Snapshot Send <SnapS> <ON/OFF>-

This function serves to transmit sound parameter data of the currently selected drum kit as MIDI controller data. In this way you can store a kit's sound settings along with the music data.

ON - When selecting a kit in Edit or Master mode the sound parameters of all of a kit's instruments will be transmitted as Midi-Controllers!
EXCEPTION: This is not true for the parameters Velocity ON/OFF and the sample selection (909, 808 ...). Switch your sequencer into record and select the desired kit. Make sure the Airbase 99 is not receiving any Midi data (especially controller data!) at this time. The sequencer should now have recorded the settings of all nine instruments as controller data. (see also MIDI implementation chart). This data can now be sent back to the Airbase 99 simply by playing back the sequence. The currently active kit will adopt the corresponding sound settings.

OFF - The Airbase 99 will not transmit any controller data when a kit is selected.

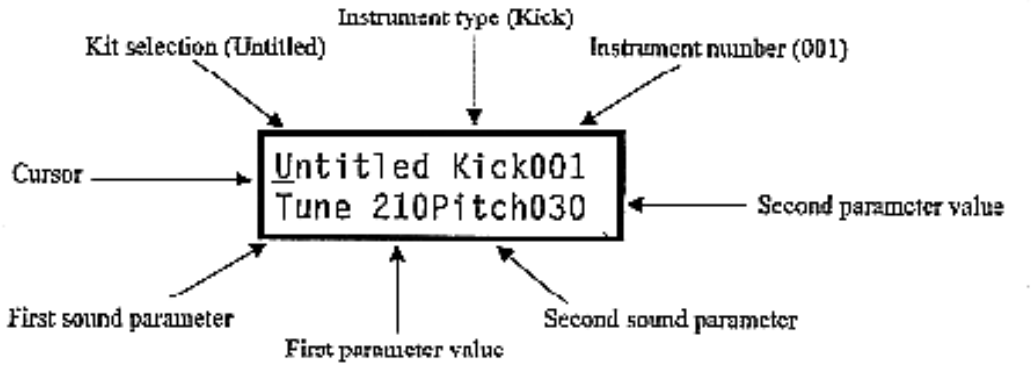


Transmit Controller <TxCon> <ON/OFF> --
If you want to transmit the controller data generated by turning the AirBase99's value knob via MIDI, set this parameter to ON.
ON - While editing sound parameters, corresponding Controller-Data will be sent through the Midi-Out socket.
OFF - The AirBase doesn't send any Controller-Data.

EDIT-Mode:
Editing Kits and Instruments

In Edit Mode you can create new drum kits from existing variations of the various instruments and edit every instrument parameter individually.
Press the Edit button to get into the edit menu. The edit button will light up.

The Display in Edit-Mode:



The top line shows the name of the kit being edited. After pressing the Edit button, the cursor will be positioned under the kit selection. In Edit mode, only the kit name is displayed, not the kit number.
Turn the value knob to select a kit you want to edit.

While editing, instruments can still be triggert via keyboard or sequencer

Note: If you want to store an edited kit, without replacing the original version, you can copy this kit to a free memory position beforehand (see also Master Mode - editing the kit name).

Editing a Kits Individual Instruments

Once you have selected a kit, you can select the instrument you want
parameter. The cursor is now under the instrument type parameter.Turn the value knob to select an instrument type. to edit. Press the right cursor button to get to the instrument selection

The following instrument types can be selected.

Instrument type	Display-Abbreviation	Instrument type	Display-Abbreviation
Kick Drum	Kick	Clap	Clap
Snare Drum	Snar	Rimshot	Rims
Low Tom	LoTo	Crash	Crsh
High Tom	HiTo	Ride	Ride
Hi Hat	HiHa	LF0 1 & LFO 2	LFOs

Instrument Number Variations of Instruments
256 variations (000-255) of any instrument type (Kick , Snare ,LoTom, HiTom etc.) can be recalled and stored. Press the right cursor button to select a three digit instrument number.

The cursor is now positioned underneath the instrument number.
Turn the Value knob to select an instrument number. Play the instrument from your keyboard while you recall different instrument numbers. In this way you can audition all previously stored variations of the instrument. There are 100 factory preset variations for each instrument type.
Pressing the left cursor button gets you back to the instrument type selection parameter. Simply by putting together preset instrument variations you can quickly create new kits.

The instrument variations of the ROM (**R**ead **O**nly **M**emory) bank can be edited, but not stored. The AirBase 99 is shipped from the factory with a copy of the ROM bank in bank 001. The instrument variations are stored in instrument numbers 000-009. Check the overview for the memory bank hierachy!

Editing Instruments - Sound Parameters

Kick Drum Parameters

- Tune <Tune> <000-255>
This parameter controls the intensity of the pitch envelope.. On a synthesizer, it would correspond to „pitch modulation intensity" of a pitch envelope with attack set to 0 and the deacy set to a fixed value controlling the pitch (oscillator frequency). A high value will give you the typical 909 „kick in the gut" effect while a very low value will produce softer, 808-type Kick and bass sounds

- Pitch <Pitch> <000-255>
This parameter controls the basic pitch of the Kick drum. Sub-bass sounds down to 25 Hz and relatively high tones can be set. Not to be confused with the tune parameter! Caution: This parameter is called „Tune" with all other instruments. Because of the popularity of the TR909 it is called „Pitch" for the Kick drum

- Decay <Decay> <000-255>
Controls the kick drum's decay time. .

- Harmonics <Harmo> <000-255>
Controls the harmonic spectrum of the VCO. The near sine-shape of the Kick Drum wave can be continuously formed into a parabolic wave form resulting in a harder, timpani-like sound which distinguishes it from simple distortion.

- Pulse <Pulse> <000-255>
Controls the pure pulse-wave component of the kick drum's attack phase (see also attack parameters). - Pulse is the pure square wave impulse that is routed to the attack VCA.

- Noise <Noise> <000-255>
Controls the pure noise component of the kick drum's attack phase (see also attack parameters). Noise produces a clap-like sound in the attack phase, depending on the intensity. Note the settings of the „Attack" and „EQ" parameters. With a high EQ setting the noise component of the kick drum sound will hardly be audible.

- Attack <Attac> <000-255>
The following is important when it comes to understanding how the attack component of the AirBase 99 kick drum sound works: The components 'pulse' and 'noise' are mixed and the intensity of the resulting mix is then controlled by the attack parameter. If a value of 000 is set here, changes in the pulse or noise settings will not be audible! Pulse and noise can be set to 000 respectively, which means that kick drums can be set to play completely without attack, with noise only or with pulse

only.

- EQ <EQ> <000-255>
EQ smoothes the kick drum's output with a gently sloping filter. If set to 000, the filter will be completely open. Note: Changes in the noise parameter are best heard when the filter is opened.

- Level <Level> <000-255>
Controls the basic volume of the kick drum.inside the selected kit.

- Velocity <Veloc> <ON/OFF>
This parameter determines wether or not the volume of the kick drum is controlled by note-on velocity.
ON - Note-on velocity affects the kick drum volume.
OFF - The Kick drum always plays at the volume level set in the „Level" parameter. Incoming note-on velocity values are ignored.

- Scale <Scale> <LIN/SEM>
This parameter determines wether the „Pitch" parameter affects the kick-drum's pitch linearly or in semitone steps.

LIN - Editing the pitch parameter will cause pitch to change linearly in 256 steps (Pitch000 - Pitch255).

SEM - Editing the pitch parameter will cause pitch to change in
semitone steps. Not all 256 steps can be set. The values increase
in bigger steps, e.g.: Pitch044 - Pitch049 - Pitch054 ...

-Initializing <Init> <on/off>
Initializing the parameters of the kick will cause its sound parameters to be set to values that more or less correspond to a „normal" 909 kick drum

ON- The kick drum is initialized, but not yet stored.

OFF - The kick drum remains unchanged.

Snare Drum Parameters:

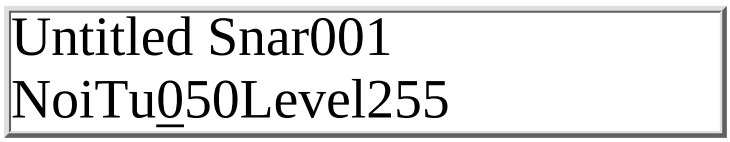
- Tune <Tune> <000-255>
Controls both of the snare drum's oscillators basic pitch.

- Snappy <Snapp> <000-255>
Snappy is the snare drum's noise component and is essentially filtered noise.

- Decay <Decay> <000-255>
Decay controls how long the snare's noise component takes to decay.

- Detune <Detun> <000-255>
Detunes the snare's oscillators in respect to each other.

- Noise Tune <NoiTu> <000-255>
The snare drum's noise filter can be tuned with this parameter. If noise is set to 000, it is switched off. In this case only the two oscillators will sound and various percussion instruments can be created, depending on the tuning. These instruments can sound similar to Rim Shot, Cow Bell or Tom Tom.



Level <Level> <000-255>
Determines the snare drum volume level inside the selected kit

- Velocity <Veloc> <ON/OFF>
This parameter determines wether or not the snare drum volume level will be affected by incoming Midi note-on velocity messages.

ON- The snare drum volume level will be affected by Midi note-on velocity messages.

OFF- The snare drum will always play at the volume level set in the level parameter. Incoming Midi velocity messages are igmored.

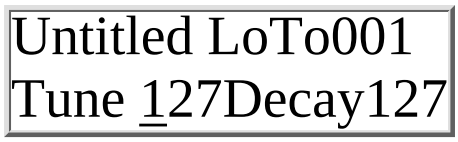
-Initialization <Init> <on/off>
Initializing the snare drum sets all parameters to values that correspond more or less to the sound of a „normal" 909 snare drum.-

ON- the snare drum is initialized, but not stored.

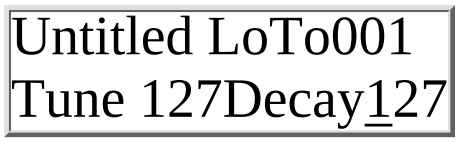
OFF- the snare drum remains unchanged.

Lo Tom Parameter:

- Tune <Tune> <000-255>
Tune determines the pitch of the LoTom oscillator. The basic LoTom pitch is lower in pitch than that of the HiTom.



- Decay <Decay> <000-255>
Decay determines how long it takes for the sound of the LoTom to decay.



- Level <Level> <000-255>
Determines the volume level of the LoTom inside the selected kit..

- Velocity <Veloc> <ON/OFF>
This parameter determines wether or not the LoTom volume level will be affected by incoming Midi note-on velocity messages.

ON- The LoTom volume level will be affected by Midi note-on velocity messages.

OFF- The LoTom will always play at the volume level set in the level parameter. Incoming Midi velocity messages are ignored.

-Initialization <Init> <on/off> Initializing the LoTom sets all parameters to values that correspond more or less to the sound of a „normal" 909 LoTom.

ON- the LoTom is initialized, but not stored.

OFF- the LoTom remains unchanged.

Hi Tom Parameter:

-Tune <Tune> <000-255> Tune determines the pitch of the HiTom oscillator. The basic HiTom pitch is higher in pitch than that of the LoTom..

- Decay <Decay> <000-255>
Decay determines how long it takes for the sound of the HiTom to decay.

- Level <Level> <000-255>
Determines the HiTom's volume level inside the selected kit

- Velocity <Veloc> <ON/OFF>
This parameter determines wether or not the HiTom volume level will be affected by incoming Midi note-on velocity messages.

ON- The HiTom volume level will be affected by Midi note-on velocity messages.

OFF- The HiTom will always play at the volume level set in the level parameter. Incoming Midi velocity messages are ignored.

-Initialization <Init> <on/off>
Initializing the HiTom sets all parameters to values that correspond more or less to the sound of a „normal" 909 HiTom.

ON- the LoTom is initialized, but not stored.

OFF- the LoTom remains unchanged**.**

The Sample-based Percussion Instruments Hihats, Clap, Rim Shot, Crash and Ride

While kick, snare and tom toms are produced by analog synthesis circuitry, the instruments hihats, clap, crash and ride are sample based. For each of these instruments there is a choice of four different samples:
a 909 sample, an 808 sample, a CR78 sample and the JoMoX nature sample.

Excepting the 909 hihats, which are quantized in 6 bit, these are 8 bit samples that are processed with analog sound forming circuitry.

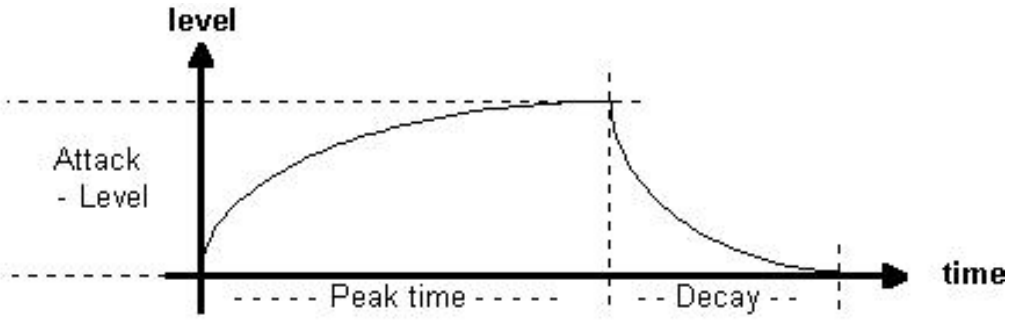
The raw samples are sent through a VCA operating as an expander that essentially controls the volume envelope of the resulting sound.
The VCA envelopes of the instruments hihat, clap, crash and ride are built up identically and can be influenced by the parameters attack, peak time and decay.

The hihat signal path passes through a combined high/low pass resonant filter. That makes it possible to cut bass or treble frequencies from a sample or out of the noise signal (see also „source" parameters) and to affect the sample's harmonic content with the resonance parameter. This filter is only available to the „hihat" instrument type!

Since the parameters for clap, rimshot, crash and ride are identical, these will not be listed individually, but discussed using the clap sample as an example valid for crash, rim shot and ride.

The Volume Envelope
for Closed Hihat, Open Hihat, Clap-,Rim Shot-, Crash- und Ride- Instruments

The volume envelope for the hihat sound generator:



The peaktime determines the point at which the envelope switches from attack to decay.
The attack parameter determines the slope of the envelope level within the peaktime-phase.
If you set peaktime to 000, the decay phase starts immediatly after triggering the instrument.
High peaktime values mean long attack times which result in a slowly rising envelope.
If the envelope level rises to maximum before the envelope reaches peaktime, the VCA is held open at its maximum until the envelope reaches the peaktime.

Using medium to high peaktime values and short decays gives you a gate-like effect. The most extreme case is attack and decay = 0, resulting in a rectangular envelope, of which the gate time can be adjusted via peaktime.
For extremely short envelopes, set peaktime to 0. Play with it and check some parameter combinationsHigh attack level values combined with a peaktime level of zero make no sense, because the envelope will not reach its maximum, resulting in a weak output level.!

Hi Hat Parameters

- Tune <Tune> <000-255>
Determines the pitch or rather the playback speed of the hihat sample- covering a very wide range. The setting is valid for the closed as well as for the open hihat. The value of 100 corresponds to the sample's original pitch.

- Closed HiHat Attack <CHAtt> <000-255>
Determines the attack intensity of the closed hihat envelope. By increaing this value you can make reverse samples fade in slowly. High values are well suited for jazzy playing styles.

- Closed HiHat Peak Time <CHPkT> <000-255>
Determines how long the closed hihat envelope is to remain open before the decay phase sets in. When a very high peak time value is set, changes in the attack value are very clearly audible. A change of the decay value, on the other hand, has only a very small effect because the sample might already have ceased to play back before the decay phase sets in.

- Closed HiHat Decay <CHDec> <000-255>
Decay determines the time for the the VCAenvelope's decay phase.

- Open HiHat Attack <OHAtt> <000-255>
Determines the attack intensity of the open hihat envelope. By increasing this value, reverse playback samples can be faded in slowly. High values are also suited for soft, jazzy playing styles.

- Open HiHat Peak Time <OHPkT> <000-255>
Determines how long the open hihat envelope is to remain open before the decay phase sets in. When a very high peak time value is set, changes in the attack value are very clearly audible. A change of the decay value, on the other hand, has only a very small effect because the sample might already have ceased to play back before the decay phase sets in

- Open HiHat Decay <OHDec> <000-255>
Decay determines the decay time of the open hihat's VCA envelope..

- HiHat Sample Select <Smple> <909/808/CR7/JMX>
Here you can select from a total of four hihat samples: 909 - a hihat sample whose sound corresponds to that of a TR909 hihat sample.
808 - a hihat sample whose sound corresponds to the sound of an analog TR808 hihat sound.
CR7- a hihat sample whose sound corresponds to an analog CR78 hihat sound.
JMX - the sound of a natural hihat.

- Reverse Play <Revrs> <ON/OFF>
ON - Closed and open hihat samples are played backwards. To obtain best results, you might want to adjust he envelope parameters.

OFF - The hihat samples are played back normally.

- Source <Sourc> <NOR/FIL/NOI>
The source parameter determines which audio signal is passed through the hihat VCA envelopes.
NOR- The hihat samples are routed directly to the VCA, bypassing the filter.
FIL - The hihat sample is routed to the filter and then to the VCA.
NOI - Instead of samples, analog noise is routed to the filter and then to the VCA.

- High Pass Filter Cutoff <CutHP> <000-255>
A value of 255 means that low frequencies are cut.. If this value is decreased, low frequencies become louder. A „High pass filter" is a filter that lets high frequencies pass and cuts low frequencies.

- Low Pass Filter Cutoff <CutLP> <000-255>
A value of 255 lets all frequencies pass. If the value is reduced, high frequencies are cut, leaving only the low frequencies. A „Low pass filter" lets low frequencies pass and cuts high frequencies..

- Filter Resonance <Reson> <000-255>
This parameter directly affects the filter resonance of both filters. . A value of 000 means that both filters are working without resonance. When high values are set, the filter's slope changes. Changing the cutoff parameter will sound different with different resonance values.
You should experiment with these parameters to get the feel of what they do. The filter basically behaves like the filter of an analog synthesizer. It is however not possilble to make it self-oscillate (whistle).

- Level <Level> <000-255>
Determines the basic volume level of the hihats inside the selected kit.

- Velocity <Veloc> <ON/OFF>
This parameter determines wether or not the hihat volume level will be affected by incoming Midi note-on velocity messages.
ON- The hihat volume level will be affected by Midi note-on velocity messages.

OFF- The hihats will always play at the volume level set in the level parameter. Incoming Midi velocity messages are ignored.

-Initialization <Init> <GO>
Selecting the Init parameter will cause the Enter button to blink. .
To abort the Init function press one of the cursor buttons. By simply selecting another parameter you can make the Enter button stop blinking.
Initializing the hihats sets all parameters to values that correspond more or less to the sound of „normal" 909 hihats, i.e. after initialization the hihats will be heard unfiltered with a normal envelope setting.
ON- the hihats are initialized, but not stored.
OFF- the hihats remain unchanged.

The Parameters of the Instrument Types Clap, Rim, Crash and Ride

As mentioned in the hihat section, the parameters for rimshot, clap crash and ride are identical.. The volume envelope is the same as in the hihat section.

Clap is discussed here as an example valid for rimshot, crash and ride!

- Tune <Tune> <000-255>
Determines the pitch, i.e. the playback speed of the clap sample.

- Attack <Attac> <000-255>
Determines the attack intensity of the clap volume envelope. By increasing this value you can for example make reverse samples fade in slowly. High values are well suited for soft attack phases.

- Peak Time <PeakT> <000-255>
Determines how long the clap envelope is to remain open before the decay phase sets in. When a very high peak time value is set, changes in the attack value are very clearly audible. A change of the decay value, on the other hand, has only a very small effect because the sample might already have ceased to play back before the decay phase sets in.

- Decay <Decay> <000-255>
Determines how long the clap VCA envelope will take to decay

- Sample Select <Smple> <909/808/CR7/JMX>
You can assign one of four samples to the instrument types rim, clap, crash and ride. The table below shows which samples are assigned to the values 909, 808, CR7 and JMX
Since the 808 has only one cymbal, ride 808 is an 808 cowbell! Crash 808 is the 808 cymbal.
The CR-78 is represented with the sounds 'claves', 'cowbell', 'crash' and 'guiro'.
How these samples are assigned can be seen in the table below.

Sample Select	**Clap**	**Rimshot**	**Crash**	**Ride**
909 (TR909)	909 analog Clap	909 analog Rim	909 Crash	909 Ride
808 (TR 808)	808 analog Clap	808 analog Rim	808 Cymbal	808 Cowbell
CR7 (CR78)	metallic Cymbal	cowbell	tambourine	guiro
JMX (natural)	Handclap	natural rimshot	natural crash	natural ride

- Reverse Play <Revrs> <ON/OFF>

ON - The sample is played backwards.
For best results, you can adapt the volume envelope parameter .
OFF - The sample is played normally.

- Level <Level> < 000-255>
Determines the basic volume level of the clap inside the selected kit.

- Velocity <Veloc> <ON/OFF>
This parameter determines wether or not the clap volume level will be affected by incoming Midi note-on velocity messages.

ON- The clap volume level will be affected by Midi note-on velocity messages.
OFF- The clap will always play at the volume level set in the level parameter. Incoming Midi velocity messages are igmored.

-Initialization <Init> <on/off>
By selecting the Init parameter, the Enter button starts flashing.

ort the Init function press one of the cursor buttons. Then you can
simply select another Midi-parameter and the Enter-button stops
flashing..

Initializing the clap sets all parameters to values that correspond more or less to the sound of „normal" 909 clap.
ON- the clap is initialized, but not stored.
OFF- the clap remains unchanged.

The two LFOs

to Modulate Sound Parameters

The AirBase 99 features two digital LFOs (**L**ow **F**requency **O**scillators). These are modulators, that are used in synthesizers
to create tremolo, vibrato and wah wah effects by modulating volume, pitch or filter cutoff frequency respectively. Even though
the AirBase 99 is not a synthesizer, the LFOs can produce unusual,
but also useful results.

The AirBase 99's LFOs are treated and edited as instruments. This means that the LFO's parameters are to be found under the
instrument type „LFOs". As with the other instrument types, you can store 256 instrument variations of the LFOs.

LFO - Parameters

LFO 1 Waveform <L1Wav> <Sup/Sdo/Tri/RCT>
This parameter determines the waveform used by the first LFO..
These are the possible settings:
Sup - Saw Up
Sdo - Saw down
Tri - Triangle
RCT - Rectangular

LFO 1 Destination <L1Des> <BDt/ SDt/LTt/HTt/HHt/FIL/CPt/RMt/CRt/RDt>
Here you can set which sound parameter will be modulated - by LFO 1. The following modulation targets are possible:

BDt - Kick Drum Pitch (**B**ass **D**rum **t**une)
SDt - **S**nare **D**rum **t**une
LTt - **L**o **T**om **t**une
HTt - **H**i **T**om **t**une
HHt - **H**i **H**at **t**une
FIL - Hi Pass **Fil**ter Cutoff
CPt - **C**la**p t**une
RMt - **R**i**m**shot **t**une
CRt - **C**rash **t**une
RDt - **R**i**d**e **t**une

LFO 1 Intensity <Int> <000-255>
LFO intensity determines the intensity with which the target - parameter will be modulated. A value of 000 turns the LFO off.

LFO 1 Rate <Rat> <000-255>
Determines the speed at which the LFO oscillates.
The absolute LFO speed is also dependant on the BPM parameter
in Master Mode.
Set the BPM parameter to the same value as that of your sequencer.
So you can program rhythmic modulations.
Should the tempo of your music change, all you have to do is to
adjust the BPM parameter in Master Mode.

LFO 2 Waveform <L2Wav> <Sup/Sdo/Tri/RCT>
This parameter determines the waveform used by the second LFO...
These are the possible settings:
Sup - Saw Up
Sdo - Saw down
Tri - Triangle
RCT - Rectangular

LFO 2 Destination <L1Des> <BDt/ SDt/LTt/HTt>
Here you can set which sound parameter will be modulated by LFO 2. The following modulation targets are possible:

BDt - Kick Drum Pitch (**B**ass **D**rum **t**une)
SDt - **S**nare **D**rum **t**une
LTt - **L**o **T**om **t**une
HTt - **H**i **T**om **t**une

LFO2 Intensity <Int> <000-255>
LFO2 intensity determines the intensity with which the target - parameter will be modulated. A value of 000 turns the LFO off.

LFO2 Rate <Rat> <000-255>
Determines the speed at which the LFO oscillates.
The absolute LFO speed is also dependant on the BPM parameter
in Master Mode. Set the BPM parameter to the same value as that of your sequncer. The following table will help you to program rhythmic modulations. Should the tempo of your music change, all you have to do is to adjust the BPM parameter in Master Mode.

Synchronization of LFO 1 <L1Syn> <ON/OFF>
With the aid of this parameter you can determine wether - LFO1 will restart after the instrument it modulates has been triggered or if it will run independantly of instrument triggers (Midi note-on)

Synchronization of LFO 2 <L2Syn> <ON/OFF>
With the aid of this parameter you can determine wether LFO2 -
will restart after the instrument it modulates has been triggered or if it will run independantly of instrument triggers (Midi note-on).

Quitting the Edit Menu - Automatic Storage Request

Keep the left cursor button pressed. An automatic repeat function will make the cursor quickly travel back to the kit selection parameter.
If you have changed an instrument's sound forming parameters,
the display wil read: "Store Instr?" and the 'Enter' button will blink.
If this request does not appear, you have not edited any parameter
and do not need to store anything.

Confirming the storage process
Press the blinking „Enter" button to store the settings under the
indicated instrument numbers.
Example: All kick drum sound parameters are stored under the number 001.
The display reads "Instrument Stored" to confirm the storage process is confirmed

Aborting the Storage Process
To abort the storage process, turn the value knob to the left until
the display reads „Store Instr? NO".

Press the blinking „Enter" button to abort the storage process
The abortion of the storage process is confirmed by the display
reading "Command Aborted"

Midi Implementation

Note-On Messages

The instruments of the Airbase 99 can be triggered by midi notes .

Airbase Instrument	Midi Instr. Name	Midi Note Number	Note name
Kick Drum	Bass/Kick Drum	36	C1
Snare Drum	Electric Snare	40	E1
Lo Tom	Low Floor Tom	41	F1
Hi Tom	High Floor Tom	43	G1
Cl. Hi Hat	Closed Hi Hat	42	F#1
Cl. Hi Hat lang	Pedal Hi Hat	44	G#1
Open Hi Hat	Open Hi Hat	46	A#1
Clap	Clap	39	D#1
Rim Shot	Rim Shot	37	C#1
Crash	Crash	49+50	C#2+D2
Ride	Ride	52+53	E2+F2

The assignment of instruments to Midi note numbers is shown in the table below.

Midi Controller Table 1

BASS DRUM	**Controller No.**	**Value range**	**internal range**

Tune	100	0-127	256
Pitch	101	0-127	256
Decay	102	0-127	64
Harmonics	103	0-127	64
Pulse	104	0-127	16
Noise	105	0-127	16
Attack	106	0-127	16
EQ	107	0-127	8
BD Level	117	0-127	256

SNARE DRUM	**Controller No.**	**Value range**	**internal range**
Tune	108	0-127	128
Snappy	109	0-127	64
Decay	110	0-127	64
Detune	111	0-127	16
Noise Tune	112	0-127	64
SD Level	118	0-127	256

LOW TOM	**Controller No.**	**Value range**	**internal range**
Tune	12	0-127	256
Decay	13	0-127	64
Level	14	0-127	256
HIGH TOM			
Tune	15	0-127	256
Decay	16	0-127	64
Level	17	0-127	256
HI HAT			
Tune	18	0-127	256
CH Attack	19	0-127	256
CH Peaktime	20	0-127	256
CH Decay	21	0-127	256
OH Attack	22	0-127	256
OH Peaktime	23	0-127	256
OH Decay	24	0-127	256
HH Level	25	0-127	256
LF Cutoff HP	59	0-127	256
LF Cutoff LP	60	0-127	256

LF Resonance	61	0-127	256

HAND CLAP	**Controller No.**	**Value range**	**internal range**
Tune	26	0-127	256
Attack	27	0-127	256
Peaktime	28	0-127	256
Decay	29	0-127	256
Level	30	0-127	256
RIM SHOT			
Tune	44	0-127	256
Attack	45	0-127	256
Peaktime	46	0-127	256
Decay	47	0-127	256
Level	48	0-127	256
CRASH	**Controller No.**	**Value range**	**internal range**
Tune	49	0-127	256
Attack	50	0-127	256
Peaktime	51	0-127	256
Decay	52	0-127	256
Level	53	0-127	256
RIDE			
Tune	54	0-127	256
Attack	55	0-127	256
Peaktime	56	0-127	256
Decay	57	0-127	256
Level	58	0-127	256

Midi Controller Table 2

Extended LFO Parameters

Controller value ->	**0**	**1**	**2**	**3**	**4-7**	**8**	**9**	**10**	**11**	**12-15**
LFO1 Waveform /75	Sup free	Sdo free	Tri free	Rct free	--	Sup syn	Sdo syn	Tri syn	Rct syn	--
LFO2 Waveform /79	Sup free	Sdo free	Tri free	Rct free	--	Sup syn	Sdo syn	Tri syn	Rct syn	--
Controller value ->	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
LFO1 Destination /76	BDt	SDt	LTt	HTt	HHt	FIL	CPt	Rmt	CRt	RDt
LFO2 Destination /80	BDt	SDt	LTt	HTt	--	--	--	--	--	--

KIT BANKS	**Controller No.**	**Value range**	**internal range**
Bank Select LSB	32	0-7 = 8 half Banks	8 Banks with 128 Kits internal Display: 4 Banks w/ 256 Kits
Prog Change	Kit Select	0-127	256 Kits per Bank

To select the Kits # 128-255 in Bank 000 - 003, send the bank select controller 32 in advance by using the values 1, 3, 5 or 7. These uneven controller 32 values address memory slots 128 - 255 of the desired bank. The values 0, 2, 4 and 6 correspond to the lower half of the specific bank.
An example: Bank 000 Kit 200 is selected by using Bank Select = 1 and Prog Change = 73
(200 - 127 = 73)

System Exclusive Data

Only the bulk dumps are handled as system exclusive data, since parameter control is generally effected by means of MIDI continuous controllers.

The system exclusive command line has the following form:

$F0(SysEx Begin), $31(JoMoX-manufacturer code), $7F(command Sys Ex Dump), $55(Header), $00(Header),XX(Data0),XX(Data1),..., $F7(End of SysEx)

The sysex sequences are displayed, as is customary, in hexadecimal form.

Reset

Switch off the AiRBase 99 off. Hold the step buttons pressed and switch the unit on again. This will initialize the memory banks. The kits and instrument variations of the ROM bank will be copied to kitbank 000 after Reset so they can be edited there.

Software Version

Directly after switching the unit on, the AiRBase 99 will display its software version.

Technical Data

Instruments Kick Drum, Snare Drum, Lo Tom, Hi Tom,
true analog with digital control of all sound-forming parameters.
Open / Closed Hi Hat , Clap, Rim Shot, Crash, Ride
8-bit samples with analog envelopes.

Connections Midi in/out/thru
Audio Mix L/R: 2 x ¼" mono-jacks
10 individual outs: 10 x ¼" mono-jacks
Headphone out: ¼" stereo-jack

Output level approximately +4 dBu at all individual outputs
Display 2 x 16 Characters LCD display
Power Supply 12V AC adapter
Casing 19" single rackspace unit steel casing
Dimensions 483 mm x 45 mm x 250 mm
Weight 4 kg

Service, Updates, tips & tricks

For further JoMoX support, please contact your local dealer or JoMoX GmbH

via Internet http://www.jomox.de

postal address JoMoX GmbH / Wrangelstr. 4 / 10997 Berlin / Germany

per FAX +49 - (0)30 / 61 70 25 74

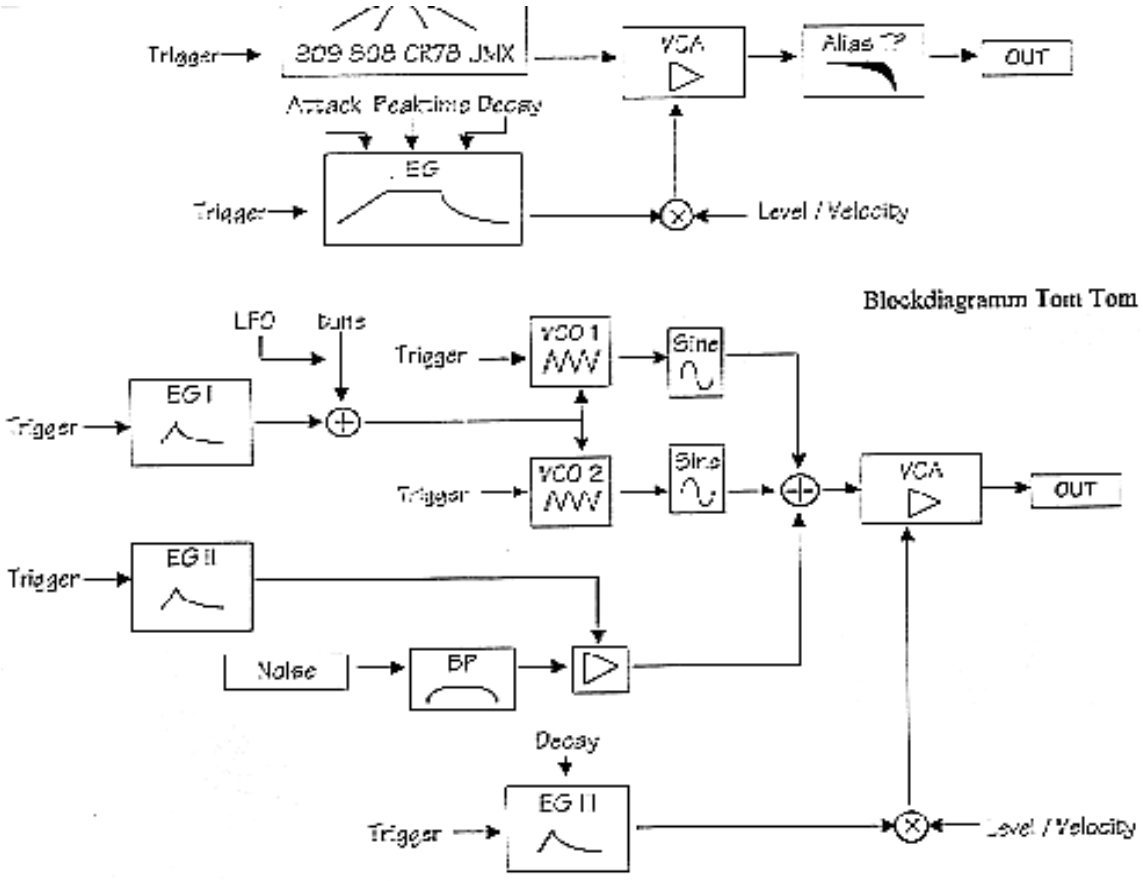
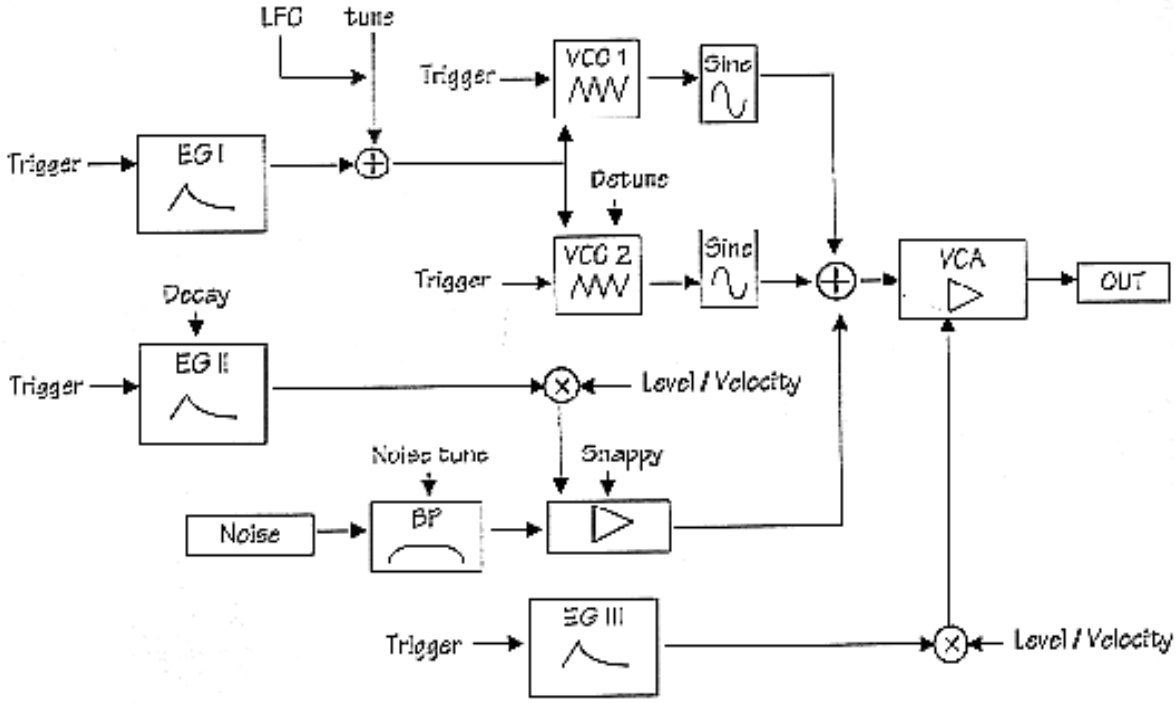
via E-Mail **info@jomox.de**

We recommend that users of our products register in one of the above-mentioned ways,by telling us.
name, postal- or E-Mail address and the machines serialnumber. We will then automatically inform customers about the newest updates, and specific features.
See our homepage for tips and tricks from our technical department and from users around the world.

Feedback

The JoMoX GmbH produces musical instruments for the creative musician.
Critical and constructive suggestions are welcome and will be given due consideration during the planning and further develoment of our products.
In order to show the wide spectrum of possibilities to other users, our dealers and interested new customers, we are particulary interested in information on sound-recording releases or live presentations performed with our products.
We wish you lots of fun, creativity and success while working with the AirBase99, and thank you in advance for incoming feedback and messages.

Berlin, December 1998



Blockdiagramm Snare Drum