soundart

USER'S MANUAL

FAHRENHEIT

Chameleon **Dance Music Module** Application

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www.soundart-hot.com

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Chapter

1 Overview

Fahrenheit is the Chameleon adaptation of the now-classic music making machines introduced in the early 80's from Japan.

A BRIEF HISTORY...

The fat monosynth in a tiny box was intended to emulate a real bass player, maybe as a practice aid for guitarists, while the two drum machines were developed to emulate real drummers. However, many musicians didn't like them as the machines simply sounded synthetic and could not replace the real thing. But the development of music always takes unexpected turns...

It was not until later on, when musicians searching for something new rediscovered these products that were sitting in second hand shops, and ironically the machines began to become essential kit in the new, beautifully synthetic sounds of the latest music.

Struggling hip-hop artists, who created brand new, powerful musical statements by turning things like their record players into musical instruments, also took to drum machines like the 808 as they gave birth to one of the most popular musical forms in the world.

Meanwhile club musicians made the 303s scream and squelch and pushed the machines to create sonic effects never intended when they were built. Along with other revolutionary music production techniques, the unorthodox use of these machines has played a fundamental part in the new worldwide musical developments that have inspired whole counter-cultures and their sounds are now familiar to everyone.

THE IDEA...

The idea behind Fahrenheit is to not only recreate these sounds and their parameters but go beyond a simple reproduction of these classics to provide a core tool for live dance music production. So we have incorporated some new functions to keep you creative too...

1.1 Main Features

- 2 monosynth 303 bass machines
- 2 rhythm machines – an 808 and a 909
- 4 distortion units
- 4 compressors
- 1 resonant KeyFilter, Low-Pass or Band-Pass, with the option to map the cut off frequency across a MIDI keyboard
- 2 simple delay units
- 1 complex stereo delay unit
- 1 reverb
- Two audio inputs (L&R) for processing of external sound sources in the mixer and FX alongside the internally generated sounds
- Total of 26 voices (2 audio inputs, 2x303, 11x808, 11x909) and 13 effects (1 resonant filter, 4 distortions, 4 compressors, 3 delays and 1 reverb) available at a time
- An independent 26 channel mixer section (allowing one for each sound source) with totally flexible routing for fast and creative mixing
- Real-time triggering and control of any sound and parameter using MIDI
- MIDI synchronization to internal or external tempo, with automatic recognition - the LED next to SHIFT key pulses in time with the tempo used
- Individual MIDI channels for each sound generator, the effects section and the mixer

1.2 Description

Fahrenheit functionality is separated in 6 different but interconnected modules, called “Parts”:

- 303[1] (monosynth bass)
- 303[2] (monosynth bass)
- 808 (drum-machine)
- 909 (drum-machine)
- Mixing
- Effects

Each Part operates on their own MIDI channel, which can be altered and saved with every preset.

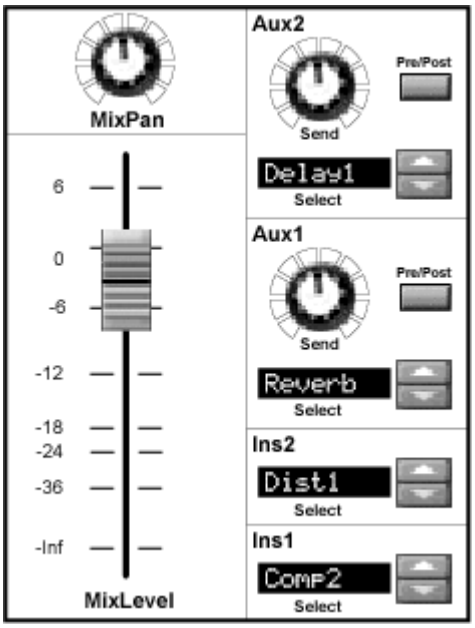
Each of the four sound generators recreates faithfully the sounds and parameters of the classic machines they refer to. On top of these individual sound controls, there are global parameters you can control, such as global volume for each drum machine. In the sections below on “Edit Mode” you will find all the details on the sound generators and how to use them.

The effects and mixing sections are coordinated with, but independent to the sound generators. They respond to their own MIDI channel and are fully automatable via MIDI.

1.2.1 THE MIXING CONCEPT

We would like to take a moment to explain why we designed it this way: after all, we could have just added FX to each sound generator, and a panning control. This would have worked OK. But this small change in concept to an independent mixer is an important step - the creative options are increased considerably, and it is far easier to try different things out. However, mixing on board a rack-unit is fiddly at the best of times, so we have built this to be as easy and flexible as possible - first and last, your creativity is the most important thing.

Conveniently, the mixer section can be thought of in the same way as a conventional analogue mixer. It has 26 channels, one for each sound source (two 303s, the individual drum sounds and audio inputs L+R).

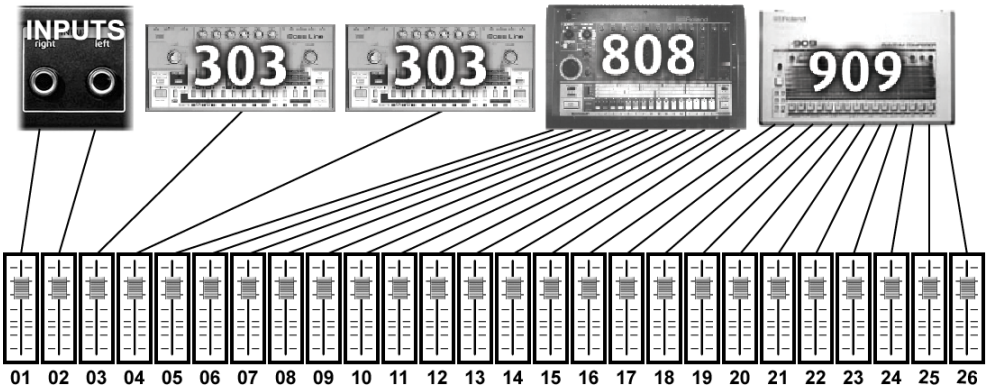


Each channel is identical:

- Volume
- Panning
- 2 FX insert slots
- 2 FX auxiliary sends, with send level and PRE/POST option

You have the power to put up to 9 insert effects in place (the 4 compressors, 4 distortions and the resonant key filter) in any of the available insert slots. The four auxiliary effects (3 delays and one reverb) can of course be applied to any of the sounds simultaneously.

SOUND GENERATORS



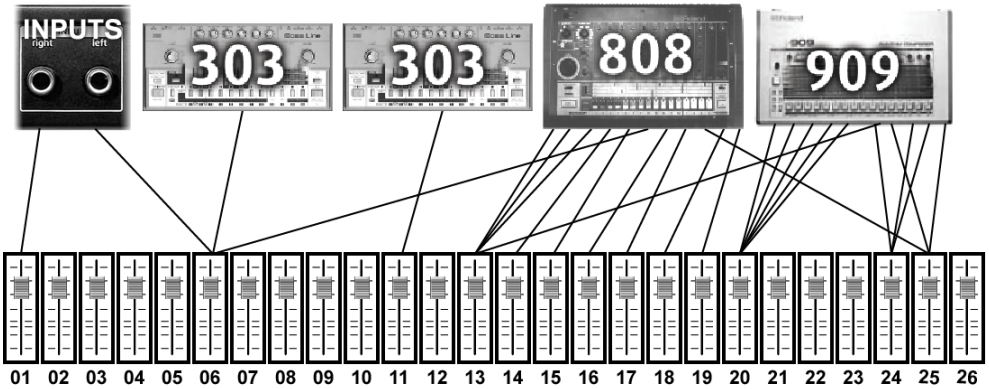
MIXER

All sounds can be sent to any of the mixer's channels. By default they are assigned to one each, but you can send them anywhere you want. What this means is you can mix and match extensively in Fahrenheit to create a wide variety of sounds. For example: heavily compress the 808 and 909 bass drums together with a shaker pattern (for "pumping" shaker volume

effects whenever the bass drums come in), put wild delay on your 303s, distort only the hi-hats and toms from the 808 and put a BP filter with heavy reverb on the two snares together.

However, that's not all. Once you have set all this up, you can switch things round almost instantly, to hear what it is like. By simply changing the mixer channel routing for each sound, you can put the 808 and 909 Bass drums through the wild delay, the snares through the channels with distortion set up on them, the filter and reverb on the 303s and then hi-hats and toms through the heavy compression instead. It is quick to do (and undo) and there are endless permutations (you don't really need us to tell you what to do but you can see the potential...) So it doesn't just create a wider palette of sounds to work with, it can allow you to stumble across creative 'accidents' that might just sound great.

SOUND GENERATORS



MIXER

So this is why we have made the mixer the way it is.

The price you pay is that you need to keep track of where everything is. But to make it easier, while you are editing each sound generator you can easily access all the mixing parameters for the channel it is currently on. We call it 'Quickmix'.

You can even remind yourself of what other sounds might be sharing that particular channel so that you can see what you are doing. This is done by holding down SHIFT when you are looking at any FX or Mixer parameter in EDIT. This we call 'Quickview'.

Between them you should be zipping around Fahrenheit in no time...

For a more detailed look at all the mixing and editing options, see Edit Mode:The Mixer on page 19.

Hopefully this overview has given you a good idea what Fahrenheit can do. Now comes the detail...

Chapter

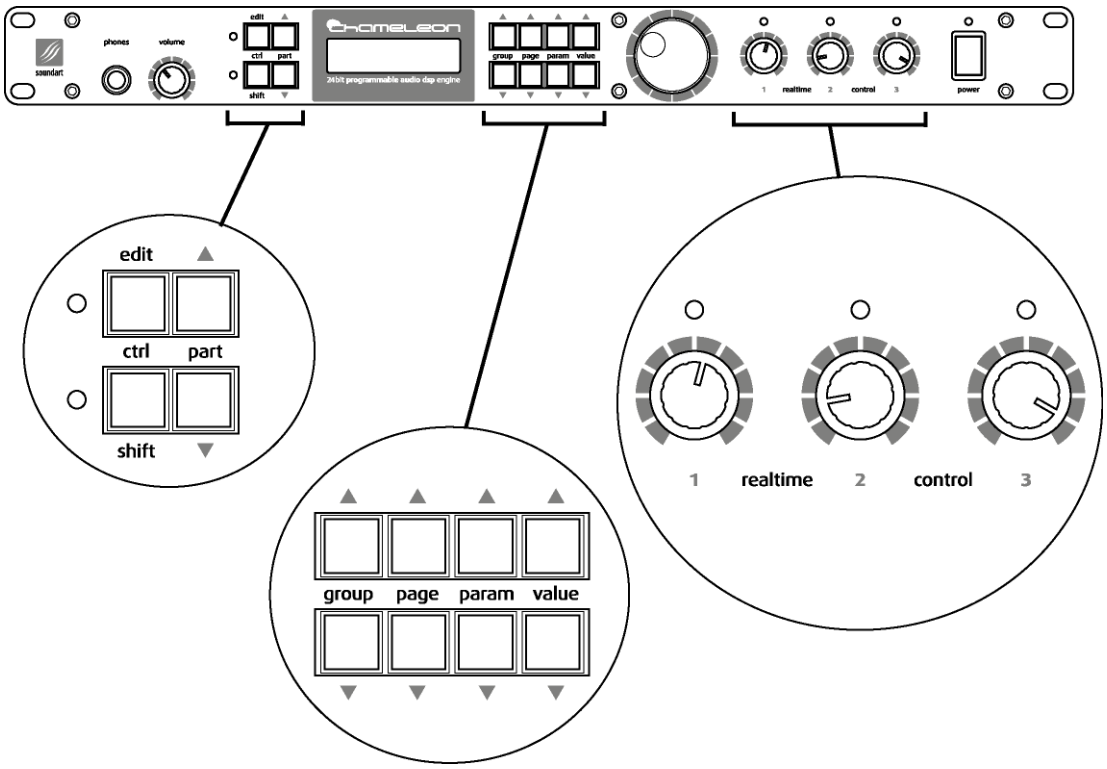
2 Operating Modes and Menus

Fahrenheit has several operating modes:

- **Preset Mode:** Typical preset sound navigation
- **Edit Mode:** For adjusting preset parameters and assignments
- **System Mode:** For adjusting global parameters and functions
- **Demo Mode:** Plays demo songs

NOTE: at any time, and in all modes, if there are any notes left "hanging" (when a external MIDI sequencer fails to follow a "note on" with a "note off" for example) you can make a "PANIC" call to the system using SHIFT and PART UP.

The following diagram highlights the main buttons used for controlling Fahrenheit. These are referred to throughout this manual. The other controller referred to is the BIG DIAL in the centre.

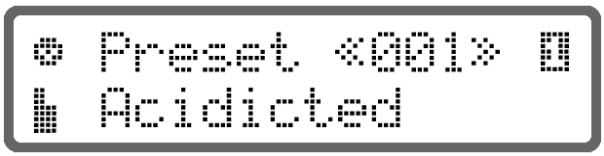


2.1 Preset Mode

Preset Mode is for selecting from the bank of 128 presets. A Fahrenheit preset is a combination of sound settings, mixer and FX settings, and other such parameter values stored in memory. When you switch on the Chameleon with Fahrenheit loaded, it automatically defaults to this Preset Mode. From here you can enter the other modes easily.

2.1.1 THE MAIN DISPLAY

In this mode, the display shows basic information about the current preset.



Here is a detailed list of what you see:

1. The display shows the number of the selected preset on the upper line, which represents the memory location. This number will blink if any of the stored parameter values are changed (via MIDI, by moving an assigned front panel knob, or by editing something while in Edit Mode), indicating that the current preset has been modified.

   If you change preset without saving what you have edited, you will lose all the changes you have made. Equally, if you have ended up with a set of sounds you don't like and want to return to the saved preset, simply use VALUE UP/DOWN to change to another a preset and back again to reload the original preset from memory again.

2. You can see the name of the selected preset on the lower line, which was assigned when the preset was stored.

3. You can also see the current knob assignment part (white-on-black number located at the right side of the upper line). You can change this with the PART UP/DOWN buttons.

   This number helps you know what you are doing with the real-time controllers on the right of the front panel. These can be freely assigned to any internal parameter for quick and intuitive control. (while in Edit Mode and looking at the parameter that you want to assign, hold down SHIFT while moving the relevant real-time controller knob).

   You can assign up to 18 parameters, three for each Part. There are 6 Parts available, from 1 to 6, representing 303[1], 303[2], 808, 909, mixer and effects, respectively.

Once you have assigned parameters to the front panel knobs for each Part in Edit Mode, in Preset Mode you can easily select which one of these parts you want to control. The LEDs located above the 3 knobs will be lit if the corresponding knob has been assigned to anything.

This can be quite useful during production as well as the more obvious use for live performance - for example: if you have set up the knobs to control the first 303s filter settings (e.g. Cut-Off, Resonance and Env Mod), and then on the effects part they instead control aspects of the reverb and distortion you are using on that 303, in Preset Mode you can quickly flick the Part number back and forth from 1 to 6 and adjust these parameter settings using the knobs to find the sound you are looking for. You can read more about this on page 25.

4. A round blinking symbol appears on the left of the upper line of the display whenever MIDI data is received at the MIDI input. Use it to check the MIDI connections with external devices are working.

5. There are two vertically moving bars on the left of the lower line, which display the stereo output level.

SOFTWARE VERSION

In Preset Mode, by temporarily pressing the key SHIFT and holding it for a while you can see a page that tells you the skin name and version.

2.1.2 WORKING IN PRESET MODE

By using the keys VALUE UP and VALUE DOWN or the BIG DIAL, you can navigate through the bank of stored presets. When you hold a key or move the BIG DIAL, the word "Preset" in the display will blink indicating that you are changing the current preset but that the new one has not been loaded yet. When you release the key or the big dial, the word will stop blinking indicating that the new preset has been loaded. Note that it is possible to 'lock' the big dial in System Mode to avoid accidental Preset changes in a live situation (see System Mode on page 28). You would then only be able to change preset using VALUE UP or DOWN.

2.1.3 CHANGING TO THE OTHER MODES

TO GO TO EDIT MODE

The EDIT key has two uses: when pressed and released immediately, the operating mode will change to the Edit Mode. Here you can edit the settings for the preset you are using. The second use is to go to System Mode...

TO GO TO SYSTEM MODE

If the EDIT key is pressed and held for a moment, the operating mode will change to System Mode. Here you can edit the global system parameters.

TO GO TO DEMO MODE

The combination of keys SHIFT+EDIT in Preset Mode puts the system in Demo Mode. This will play back a number of different demo songs that demonstrate the variety of sounds that can be made with Fahrenheit.

2.2 Edit Mode

This mode is for fine-tuning your presets. You can adjust all the parameters of the four sound generators, mix them together, apply effects and set up things like their MIDI channels.

As in the Preset Mode, Edit Mode uses the same symbols on the left to indicate MIDI data input and to show the stereo output level.

Also as in Preset Mode, you can easily see if the preset has been modified from the original stored in memory. In Edit mode this is shown by the LED next to the EDIT key blinking if the preset has been changed in any way.

2.2.1 WORKING IN EDIT MODE

The rest of the screen is used to display the different parameters you can edit in Edit Mode.

To navigate around is quite straightforward. The menus are divided into a Part:Group:Page:Parameter philosophy, found in many rack units and common to all the Soundart skins like Fahrenheit.

The hierarchy can be seen in the tables below. Each vertical pair of buttons (PART UP&DOWN, GROUP UP&DOWN, PAGE UP&DOWN and PARAMETER UP&DOWN) moves you about within the system so that you can find and adjust individual elements using the VALUE UP&DOWN keys or the BIG DIAL.

Each section below deals with the different editing options within edit Mode. The accompanying tables show the menu structure clearly, along with a brief explanation of the parameters where necessary. Note that many parameters are repeated, and so the explanations are only printed once for clarity:

2.2.2 THE 303s

These are basically identical analogue monosynths with a fat, squelchy sound. You have two waveforms to choose from, a simple filter and some shaping controls.

Part	Page	Parameter	Value	Basic Description
303[1]	**Params**	Wave	Sawtooth, Square	The basic wave that the 303 uses to make its sound. Saw sounds sharper and Square sounds smoother
		Slide	0..127	This control adjusts the slide's timing
		Tune	-12 +12	Changes the pitch in semitones
		Cutoff	0..127	Controls the filter's cut off point
		Resonance	0..127	Increases the filter's 'sharpness'
		EnvMod	0..127	Controls the envelope (or 'wow' sound)
		Decay	0..127	Controls the decay of the envelope
		Accent	0..127	Controls how strong the accent is
	Mixer	Select	Chan01 ... Chan26	To define the mixer channel. (From here Quickmix can be accessed by scrolling with PARAM UP/DOWN)

To control the original 303 parameters of SLIDE and ACCENT, we have applied a simple system:

ACCENT:

If the MIDI velocity of the note is greater than 64, the accent will sound for that note.

SLIDE (OR PORTAMENTO):

If you play a new note before releasing the old one (legato) the 303 will slide from the first note to the second. In the original 303s, there was a predefined setting for the time of the slide. In Fahrenheit, we have added the "slide" control so that you can define the timing of the slide with each preset, for more creative control.

The second 303 is laid out in exactly the same way on its own MIDI channel.

2.2.3 THE 808 and 909 DRUM MACHINES

The drum machines are actually 22 independent sound generators grouped together into the two kits - every sound can have its own mixer channel. However, MIDI control of the 808 and 909 is very straightforward.

The velocity of the notes sent to the drum machines change the volume of the sounds.

The 808 and 909 drum machines map their sounds to MIDI 'Note On' messages only, and in the arrangement shown below. The notes run sequentially upwards from the Base Key selected, which is C2 by default. (This can be changed in Edit Mode:Common) This table shows how it is arranged by default:

DrumMachine	Sound	Index	Key (base=C2)
808	BassDrum	0	C2
	SnareDrum	1	C#2
	LowTom/LowCongas	2	D2
	MidTom /MidCongas	3	Eb2
	HighTom/HighCongas	4	E2
	RimShot/Clave	5	F2
	Clap/Maracas	6	F#2
	CowBell	7	G2
	ClosedHiHat	8	G#2
	OpenHiHat	9	A2
	Cymbal	10	Bb2
909	BassDrum	0	C2
	SnareDrum	1	C#2
	LowTom	2	D2
	MidTom	3	Eb2
	HighTom	4	E2
	RimShot	5	F2
	Clap	6	F#2
	ClosedHiHat	8	G2
	OpenHiHat	9	G#2
	CrashCymbal	10	Bb2
	RideCymbal	11	B2

As you can see, the two drum machines use the same mapping for similar sounds, which is very useful if you want to try your rhythms out with the other machine. The two machines also share the same parameter mapping in their MIDI implementation, again for easy adaptation of your MIDI sequences from one drum machine to the other.

There are also global controls such as general volume for each drum kit. This parameter is extremely useful: although the sounds can be independently treated with FX and panning, if you want to lower the general volume of say the 909, you can do this easily. This control is also mapped to standard volume MIDI controller 7.

The following tables explain the different controls and where to find them:

THE 808 PARAMETERS

Part	Group	Page	Parameter	Value	Basic Description
808	BD (Bass Drum)	Params	Tone	0..127	From bright to dark
			Decay	0..127	Controls the length of the note
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	(Quickmix can also be accessed by scrolling with PARAM UP/DOWN)
	SD (Snare Drum)	Params	Tune	-64..+63	Changes the pitch
			Snappy	0..127	Adds more 'noise' to the sound
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	LT (LowTom)	Params	Tune	-64..+63	Changes the pitch
			Sound	LowConga, LowTom	Changes the sound type
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	MT (MidTom)	Params	Tune	-64..+63	Changes the pitch
			Sound	MidConga, MidTom	Changes the sound type
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	HT (HighTom)	Params	Tune	-64..+63	Changes the pitch
			Sound	HighConga, HighTom	Changes the sound type
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	RS (RimShot)	Params	Sound	Claves, RimShot	Changes the sound type
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CP (Clap)	Params	Sound	Maracas, Clap	Changes the sound type
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CB (cowbell)	Params	Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CH (ClosedHiHat)	Params	Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	OH (OpenHiHat)	Params	Decay	0..127	Controls the length of the sound
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CY (Cymbal)	Params	Tone	-64..+63	Brighter or darker
			Decay	0..127	Length of the sound
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	Common		Level	0..127	To control the volume of the whole kit
			HatsChoke	Off, On	To make the closed hi-hat 'cut' the open hi-hat sound, for more 'realistic' patterns

THE 909 PARAMETERS

Part	Group	Page	Parameter	Value	Basic Description
909	**BD (BassDrum)**	**Params**	Tune	-64..+63	Changes the pitch of the drum
			Attack	0..127	The 'punchiness' of the sound
			Decay	0..127	The length of the sound
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	(From here Quickmix can also be accessed by scrolling with PARAM UP/DOWN)
	SD (SnareDrum)	**Params**	Tune	-64..+63	Changes the pitch of the drum
			Tone	0..127	Changes the brightness
			Snappy	0..127	Adds 'noise' to the sound
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	LT (LowTom)	**Params**	Tune	-64..+63	Changes the pitch
			Decay	0..127	Changes the length
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	MT (MidTom)	**Params**	Tune	-64..+63	Changes the pitch
			Decay	0..127	Changes the length
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	HT (HighTom)	**Params**	Tune	-64..+63	Changes the pitch
			Decay	0..127	Changes the length
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	RS (RimShot)	**Params**	Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CP (Clap)	**Params**	Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CH (ClosedHiHat)	**Params**	Decay	0..127	Changes the length
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	OH (OpenHiHat)	**Params**	Decay	0..127	Changes the length
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	CC (CrashCymbal)	**Params**	Tune	-64..+63	Changes the pitch
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	RC (RideCymbal)	**Params**	Tune	-64..+63	Changes the pitch
			Level	0..127	
		Mixer	Select	Chan01 ... Chan26	
	Common		Level	0..127	To control the volume of the whole kit
			HatsChoke	Off, On	To make the closed hi-hat note 'cut' the open hi-hat sound, for more 'realistic' patterns

2.2.4 THE AUDIO INPUT

As the Chameleon has audio input, we thought, 'why not use it?'. So in addition to the internally generated sounds, you can also process any line level signal along side in the mix. This means that you can make filtered disco effects and more...

The controls are simple – you set the input level, and then the mix channel that the input is routed to. You can then treat it like any of the other internal sounds.

So for example, you could use Fahrenheit to add effects to a simple synth you might want to use live, that could use its own channel, or you could create more wild effects by combining your external sounds with the internal sound generators on a channel that you are distorting and filtering...

With a simple drum machine/sequencer/sampler and the Chameleon you can create you whole set for a gig. The Chameleon provides the core sounds and real-time controllable effects, while the other machine(s) can provide more specific sounds for you to play with...

This table shows the layout of the pages for adjusting the Audio Input controls.

Part	Group	Page	Parameter	Value
Input	**Input L**	**Params**	Level	1..127
		Mixer	Select	Chan01... Chan26
	Input R	**Params**	Level	1..127
		Mixer	Select	Chan01... Chan26

2.2.5 THE MIXER

The mixer has been designed to be as flexible as possible, but with ease of use in mind. Any sound can be routed to any channel, so you can group several sounds on one channel if you wish. It is for this reason that you still have a primary level control for each of the sounds amongst their parameters, above. That way you can still mix the sounds if they are going to the same channel. (normally it is better to leave these primary level controls alone unless you need them).

Here is a table showing the mixers parameters for each channel:

Part	Group	Parameter	Value	Basic Description
MIXER	**Chan01-26**	MixLevel	0..127	Channel volume
		MixPan	-64..+63	Left / Right mix
		Ins1	Off, Dist1, Dist2, Dist3, Dist4, Comp1, Comp2, Comp3, Comp4 KFilt	The FX you place in a channel insert will process the whole signal as if the FX is a part of that channel. Each effect can therefore only be used to process one channel at any one time. Here is where you select the effect you want to use.
		Ins2	Off, Dist1, Dist2, Dist3, Dist4, Comp1, Comp2, Comp3, Comp4 KFilt	You can of course use two inserts on the same channel... NOTE: for any insert slot, if you try to select an insert that is being used elsewhere, it will blink instead of loading it. You can still load it if you wish, using SHIFT&VALUE UP. This will remove it from the old channel and load it into the new position.
		Aux1Sel	Off, Delay1, Delay2, Delay3, Reverb	Here you choose from the different effect types. With an auxiliary effect set up on a channel you are choosing to send a portion of your signal to an FX processor "on the side" while leaving the main signal untouched.
		Aux1Send	0..127	The amount you send to the FX
		Aux1Fader	Pre, Post	You can send it independent of (Pre) or related to (Post) the channel's MixLevel
		Aux2Sel	Off, Delay1, Delay2, Delay3, Reverb	
		Aux2Send	0..127	See Aux 1...
		Aux2Fader	Pre, Post	

USING QUICKMIX:

Although the mixer part is independent of the sound generators, we have integrated them in such a way that you can access their parameters easily.

When you are editing the parameters for a sound, for example the 909 bass drum, you have the option to choose its mixer channel. Once you have chosen the channel, if you scroll up (using PARAM UP and DOWN) you can immediately access the mixer parameters for that particular channel without having to go to the mixer section. This is the Quickmix.

So if you have selected channel 10 for a Bass drum, you can edit channel 10's parameters simply by scrolling upwards. However, if at anytime you choose to scroll down and switch the Bass drum to channel 3, you can then scroll up and this time find all the parameters for channel 3 instead. This is what makes the mixing system so fast and flexible.

USING QUICKVIEW:

Now if you have set up a complicated mix, with several sounds using the same channel, it can be a pain to keep track of it all.

So at any time in Edit Mode that you are looking at a mixer or FX parameter, simply hold down the SHIFT key and you will see a scrolling list of the channels/sounds that are using that effect/channel. This way you can see where you are putting things, and remind yourself what you are editing.

2.2.6 THE FX SECTION

Fahrenheit's effects processors are either routed as either an insert or an auxiliary.

2.2.6.1 INSERTS

The FX you place in a channel insert will process the whole signal as if the FX is a part of that channel. Each effect can therefore only be used to process one channel at any one time.

DISTORTION

There are four distortion units. You can tweak their two settings to get anything from mild fuzziness to fat screaming sounds.

Part	Group	Parameter	Value	Basic Description
Effects	Dist1	Amount	0..127	
		Shape	0..127	From mildly fuzzy to raspy and crunchy
	Dist2	Amount	0..127	
		Shape	0..127	
	Dist3	Amount	0..127	
		Shape	0..127	
	Dist4	Amount	0..127	
		Shape	0..127	

COMPRESSION

There are four compression units. They each have two controls, THRESHOLD and RATIO. These can be used to attenuate the dynamics of a sound, that is, to control its loudness.

Basically, as a sound gets louder the compressor will compensate dynamically by lowering its volume. How much and how quickly depends on the settings. The RATIO controls the strength of the compression and THRESHOLD controls when the effect actually kicks in. A high RATIO means in will compensate a lot, whereas a high THRESHOLD means that only the loudest part of the sound is compressed. This type of effect can be quite subtle, but is often used to make a sound "tighter" or "punchier", especially at extreme settings.

Part	Group	Parameter	Value	Basic Description
Effects	Comp1	Ratio	0..127	How strong the compression is
		Threshold	0..127	When the compression 'kicks in' (a lower value=sooner)
	Comp2	Ratio	0..127	
		Threshold	0..127	
	Comp3	Ratio	0..127	
		Threshold	0..127	
	Comp4	Ratio	0..127	
		Threshold	0..127	

KEYFILTERING

We've added a resonant KeyFilter to the range of insert effects, which considerably increases the range of sounds you can create. From lowpass filterdisco effects over a whole drum kit or bandpass modulation of the hihats, to double filtering over a 303 for phasey-type effects, (by using its own filter plus the KeyFilter).

Factory presets 5 and 11 show examples of how you could use the filter. (to hear what we mean, in Preset Mode change the part number to 6 using the PART UP/PART DOWN buttons, so you can use the real-time front panel control knobs to play with the filter on these presets, while playing back a midi rhythm from a sequencer or auditioning the sounds from your keyboard).

The Key Filter has the option of controlling the filter frequency manually, (or by controller message from your sequencer) or, uniquely, you can map the filter cut-off frequency over octaves of your MIDI keyboard. So you can play or record a pattern of notes, that will then control the filter.

For example, record a drum pattern, route all the sounds to one channel with the insert filter activated, and then record a further sequence that opens and closes the filter in varying degrees in time with the beat.

You can also control a simple envelope for the filter, which will give each trigger of the filter from the keyboard a further shape over time, for more sonic sculpting. A classic example might be a 'wow' sound.

The Key Filter controls are outlined below:

Part	Group	Parameter	Value	Basic Description
Effects	**KFilt**	Type	BP / LP	This is a two mode resonant filter: **Low Pass** = only frequencies below the cut off frequency pass through **Band Pass** = rejects both low and high frequencies with a pass-band in between them
		KeyToFreq	On / Off	Turns on or off the MIDI keyboard filter control. If this is 'on', the next parameter, FREQ, will not be shown.
		Freq	0..127	This allows you to sweep about within the frequency range to select the point at which the filter will function
		Reso	0..127	**allows you to make the cut-off frequency feedback upon itself, which you can hear as a sharpening of the sound**
		Amount	-64..+63	This sets the envelope depth. It defines how much (–ve or +ve) the filter will open (or close) each time the MIDI note is received.
		Decay	0..127	How quickly the envelope settles back down to its starting point.
		KeyLow	C-2..G8	along with Keyhigh (below) you can map the cutoff frequency over part or all of your MIDI keyboard.
		Keyhigh	C-2..G8	see above.

2.2.6.2 THE AUXILIARY FX

With an auxiliary effect set up on a channel you are choosing to send a portion of your signal to an FX processor while leaving the main signal untouched. This means that you can balance the mix between the main, unprocessed sound coming through the channel and the processed sound that comes from the FX. An example might be reverb, where you might want to add just a hint

The Auxiliary effects you have to choose from are:

DELAY

There are three delay units. Two are mono, and one is stereo. They all share the same features, but the third delay unit is made up of two mono delays combined for more complex stereo effects.

Part	Group	Parameter	Value	Basic Description
Effects	**Delay1 or Delay2**	TempoSync	Off, On	you can choose to synchronise the effect to the MIDI tempo of your sequencer
		Clock	32nd T ... 1 Bar	when TempoSync is "On", you can choose between different rhythmic settings:
		Time	0ms ... 1354ms	when TempoSync is "Off", you can set the delay in milliseconds. (there are 128 choices between 0 and 1354ms)
		Feedback	0..127	The amount of repeating echoes
		Color	-64..+63	Whether the echoes will get darker or brighter as they repeat
		RevSend	0..127	To mix the delay signal into the reverb FX
		OutLevel	0..127	Use this to balance the effect with the rest of the mix
		OutPan	-64..+63	Left / Right mix
	Delay3	TempoSync1	Off, On	
		Clock1	32nd T ... 2nd	
		Time1	0ms ... 1354ms	See delay 1
		TempoSync2	Off, On	
		Clock2	32nd T ... 2nd	
		Time2	0ms ... 1354ms	
		Feedback	0..127	
		Color	-64..+63	
		RevSend	0..127	
		OutLevel	0..127	
		OutPan1	-64..+63	
		OutPan2	-64..+63	

REVERB

The Fahrenheit reverb can create sounds from long dark halls to short tight rooms.

Part	Group	Parameter	Value	Basic Description
Effects	**Reverb**	Predelay	0..127	Time before the reverb sounds
		DecayTime	0..127	Time it takes for the reverb to die away
		Damping	0..127	Bright or dark
		OutSend	0..127	Use this to mix the reverb in with the original mix

2.2.6.3 COMMON PARAMETERS

There are a few common controls for MIDI. You can set the MIDI channel for each part, and save it with the preset (for instance, Factory Preset number 16 "Boomboy" has both the 303s on one channel for a fat bass

sound and both the Drum kits assigned to channel 3 for a heavy kit as well).

The Base Key of the 808 and 909 can be set here too, which is the key used to set where on the keyboard you can play the drum kits.

Part	Page	Parameter	Value
Common	**303**[1]	Midi Chan	1..16
	303[2]	Midi Chan	1..16
	808	Midi Chan	1..16
		Base Key	C-2..G8
	909	Midi Chan	1..16
		Base Key	C-2..G8
	Mixer	Midi Chan	1..16
	Effects	Midi Chan	1..16

Although there are a lot of parameters available, it's not hard to locate one of them using this menu structure once you have navigated around for just a short time.

2.2.7 THE REAL-TIME CONTROLLERS

While in Edit Mode you can assign any of the three front-panel real-time control knobs to almost any of the available parameters (except the Common ones).

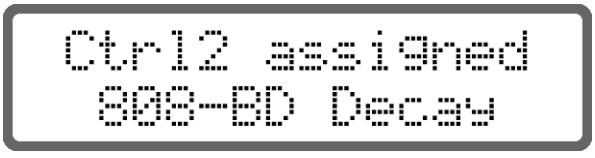
For each Part, you can assign one parameter to each of the front panel controls. This means you can assign up to 18 internal parameters, three per Part. The controls will change depending what part you have selected.

In Edit Mode the Part changes automatically as you move around. As long as you are looking at a parameter for the first 303 for example, you will be able to adjust the three parameters you assigned to the real-time controls for that 303. But if you navigate to edit something in the FX part, the real-time controls will follow: you can then adjust the assigned controls for the FX instead.

You can also control these parameters from Preset Mode as well, as long as the corresponding Part number is showing on the right hand side of the Display (white on black). You change this with the PART UP/DOWN buttons.

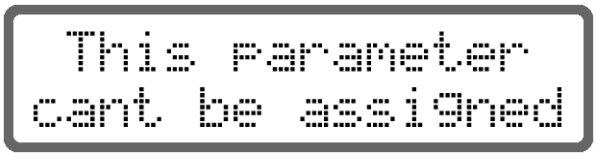
2.2.7.1 ASSIGNING THE REAL-TIME CONTROLLERS

To assign the current parameter to a knob, press and hold the key SHIFT while turning the relevant knob. The parameter will not be altered, only assigned.



Note that if you turn the knob all the way round to position zero (to the left) with the SHIFT key down, you will de-assign the knob instead.

There are other parameters however, such as system parameters that cannot be assigned to the front panel knobs. If you try to assign one, Fahrenheit will simply tell you that:

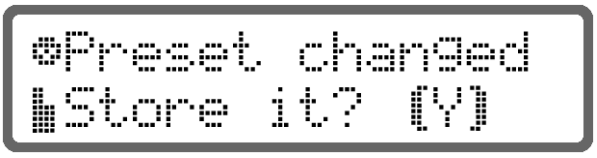


Appendix B shows the MIDI mapping for each available parameter to standard MIDI "controller change" and "poly aftertouch" messages.

2.2.8 FINISHING AND PREPARING TO SAVE YOUR EDITS

To exit the Edit Mode and return to the Preset Mode, press and release quickly the EDIT key again. If at this point any of the parameters of the current preset have been modified, you will be asked if you want to store the modified preset to memory. You can choose whether you want to overwrite the old preset or save it with a new name / new location.

So it will ask you if you want to store the altered preset like this:



By pressing VALUE UP and VALUE DOWN selects between yes (Y) or no (N).

Once selected, press EDIT to proceed or SHIFT to abort and return to the Preset Mode without storing. If you abort, your preset will still be modified, the number will blink to remind you of this, and you will still be able to store it later.

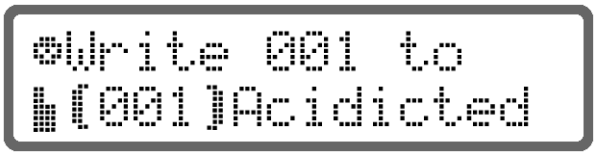
If you want to start over with the original preset from memory, from Preset Mode simply use VALUE UP/DOWN to change to another preset, and then change back to load the original sound from memory.

If you are sure you want to save your preset, just press and hold the EDIT key down and it will let you save it straight away without asking. This is also useful if you haven't changed anything but want to save it to a new location (otherwise the Edit button wouldn't normally ask you if you want to save it as you have made no changes, and would simply take you back to Preset Mode.)

2.2.8.1 NAMING AND NUMBERING

So once you have chosen to save the preset, the next screen will allow you to set the name and number of the preset you are saving. By default the current preset number and name will be shown.

First you can change the number, then the name. Use the BIG DIAL or the VALUE UP and VALUE DOWN keys to alter the value, and the EDIT key to move to the Name field to edit that. (The active field is enclosed between two animated brackets).



When the Name field is selected, you edit the name like this: the VALUE UP and VALUE DOWN keys choose from the different characters available (from numbers to capital letters and symbols), and the PARAM UP and PARAM DOWN keys move you around left or right within the name.

You can always jump back to the preset number field from the preset name field (and back again) using the keys PAGE UP&DOWN.

If you are saving to another location, by default the name and number of that location will be shown. However, if you wish to use the original name of the source preset you are copying to the new location, you can do so. While you are editing the name, simply press PART UP or DOWN and it will give you the option of using the source name. The VALUE UP and VALUE DOWN keys choose between "Y" or "N", and the EDIT key will execute.

Once finished, press the EDIT key to store the settings, or press the SHIFT key to cancel the operation.

IMPORTANT:
NEVER TURN OFF THE CHAMELEON IMMEDIATELY AFTER SAVING A PRESET. CURRENTLY, THE WHOLE FLASH MEMORY IS BEING ACCESSED AND YOU COULD LOSE ALL YOUR PRESETS. HOWEVER IF YOU LEAVE IT UNTIL TWO SECONDS AFTER IT HAS FINISHED SAVING THE PRESET YOU WILL NEVER HAVE ANY PROBLEMS.

An example of this situation might be if you want to shut down your system for the night. You might be saving your preset, and then immediately powering down the unit. Just wait a couple of seconds longer and you wont get a shock in the morning...

To explain, this is because we have designed the system to be as smooth to use as possible. So while you are working, you are disturbed by the saving process for as little time as possible, because some of the saving is finalized in the background. In reality this should never be a problem, even though you should have regular back-ups of all your presets anyway, because you need to make SysEx backups every time you change Skin...

2.3 System Mode

The System Mode is entered when pressing and holding the EDIT key when in Preset Mode.

In this operating mode you can modify several global parameters and access different utility functions. These parameters are independent of whatever preset you might have loaded.

This section also includes the pages where you perform the all-important MIDI system exclusive dumps that safeguard your presets before you might load a new skin instead of Fahrenheit.

The screen looks like this:

and you simply select from the different SysEx dump types and then press VALUE UP/DOWN to execute. If your MIDI sequencer has been put into record first, you can record the data as it streams out from the Chameleon and save it as a MIDI file, just like the other Chameleon files from us that you use to load skins and presets. To reload these back into the Fahrenheit later you simply play them to the Chameleon on any MIDI channel and the Chameleon will do the rest.

Be careful to start your sequencer before you execute a system exclusive MIDI dump, and not to stop your sequencer before it has finished.

The table on the following page shows all the available system parameters.

The global parameters accessible from System Mode are:

Group	Parameter	Value	Description
Dump	**Snapshot**	Do it...	SysEx dumps are MIDI code that the Chameleon will send to your MIDI sequencer to save the internal settings of a Skin for safekeeping. Place your sequencer in record and then use the VALUE UP key to execute.
	Preset	Do it...	This sends the current preset
	Full Bank	Do it...	This sends the whole bank of presets
	Global Data	Do it...	This sends the rest of the set up data for Fahrenheit, such as the parameters in this table.
	Total	Do it...	Sends a dump of everything. This is the safest to use. You should make a SysEx dump regularly to make sure you never lose all your finely tuned presets
Input	**InputThru**	0..127	Controls the level of the stereo input signal routed directly to the output (soft bypass).
Sync	**SyncMode**	Internal, Auto, External	SyncMode defines the source of the MIDI clock to synchronize the delays. When set to internal, the MIDI clock is generated internally using the Tempo specified in the next parameter. If set to external, the clock is extracted from the incoming MIDI stream and the Tempo is calculated from it. The Auto Mode is used to automatically change between external and internal tempo: if the system receives incoming MIDI clock, then it will follow the external tempo. If there is not incoming MIDI clock, then the system will use the internal tempo.
	Tempo	65..192 BPMs	Sets the internal tempo rate
MIDI	**MidiThru**	Off, On	When on, the Chameleon will echo out instantly of the 'MIDI OUT port all information that it receives at the MIDI IN port
	Global Chan	1..16	This is used to process incoming Program Change messages (if Rx PrgChg is enabled), and to send them if Tx PrgChg is enabled.
	SysEx ID	0..127	If you have more than one Chameleon, and you want to send SysEx information to them independently on the same MIDI chain, you can uniquely identify them using this setting
	Rx CtrlChg	Off, On	Fahrenheit will respond to MIDI controller change messages
	Tx CtrlChg	Off, On	When this is "on", whenever you adjust a parameter, Fahrenheit will transmit the corresponding MIDI controller change message. Useful if you want to record a performance with the real time controllers
	Rx PrgChg	Off, On	Will respond to program change messages (for changing preset)
	Tx PrgChg	Off, On	Fahrenheit will transmit a program change messages whenever you change preset
Setup	**TempoLED**	Typ, Alt	You can choose between two types of flash patterns for the tempo LED. Straight flashes or a slightly longer flash on the first beat of the bar
	LockEnc	Off, On	When playing with the real-time controllers, it is possible to knock the big dial by accident, which could mean changing preset in Preset Mode. This option switches off the big dial in Preset Mode so that during a gig you don't accidentally change preset and sound stupid. Aren't we nice.
	ScrnSaver	Off, 1m, 3m, 5m, 15m	Sets the waiting interval without panel or MIDI activity for displaying the Screen Saver.
Utility	**Init Preset**	Do it...	You can reset a preset's parameters (but without losing it's name) so you can start again. Note: you still have to save the changes for it to be permanent
	Factory Bank	Do it...	This will wipe your user presets and initialise all presets back to identical defaults. Unlike Init Preset this will happen straight away. Careful...
Info	**Version**		For your information...
	Serial No		For your information...

2.4 Demo Mode

In Demo Mode Fahrenheit will play back demo songs written especially for Fahrenheit.

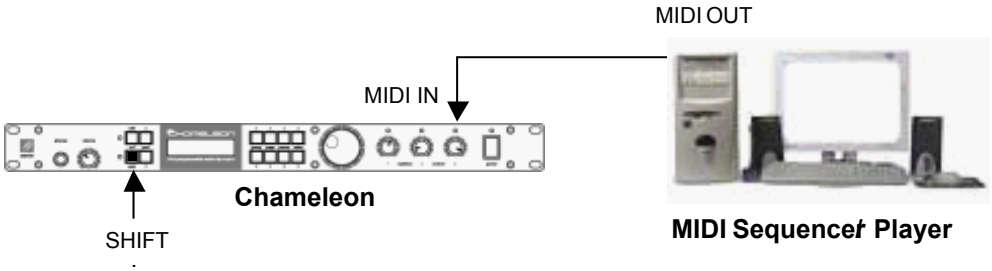
The user can select one from the five available demos using the keys VALUE UP&DOWN. Any other key will exit this operating mode and will return to the Preset Mode.

While the demo song is playing, the SHIFT led blinks at the song tempo, and the LEDs above the knobs will sequence to keep you amused...

Appendix

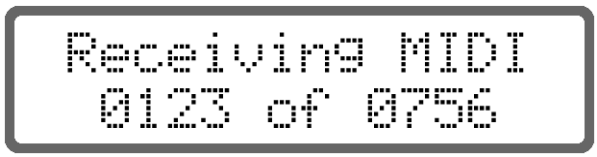
A Loading skins

To load a new skin or version update inside the Chameleon follow the instructions below:



- Power up the Chameleon with the Shift Key held down, to put it in ready mode to accept the new skin. It will show this message:

- Connect the MIDI OUT of your MIDI Sequencer/Player machine (for example, a computer with a MIDI interface) to the MIDI IN of the Chameleon and Play the Skin MIDI File containing the new skin or version update. It's recommended to disable the MIDI clock in the MIDI Sequencer/Player. If everything is connected properly, the following screen will be displayed showing an increasing block counter.



- When the counter arrives at the last block the Chameleon will ask you to store the skin in the internal Flash memory: this must be confirmed by pressing the SHIFT key within 20 seconds in order to accept the received data. If you don't press SHIFT the Chameleon will simply return to the "Waiting" state. If you do press the SHIFT key to accept, the skin will be burned in the internal FLASH memory.

  If any problem happens during the downloading process, the

display will show "**BAD DATA**" or "**TIME OUT**". To solve this, try setting a lower tempo in the sequencer (e.g. 90 BPM)

After the process has been successfully completed, the Chameleon will power-up automatically, loading the new skin, which will need a few seconds to be fully operative after reconfiguring all the internal resources to it's needs. It is at this stage that all the old presets of the previous skin are wiped out.

It is therefore vital that you save all your precious work by doing a MIDI dump BEFORE you load a new skin, even if it is just a version update.

NOTE: There's no risk of damaging the Chameleon with wrong or corrupted data, as the Chameleon just won't accept it. In case of error, the old skin will remain unharmed.

Appendix

B Midi Implementation

The next tables show all the part parameters that have been mapped to MIDI Controllers. Their value can be changed using standard MIDI control change messages (0xBn, ctrl, value). "Midi Chan" refers individually to the channels set for each Part in the 'Common' section of each preset.

PART 1: 303 one (and audio input L)

MIDI Chan	MIDI Ctrl	Parameter
303[1] Channel	7	**Channel Volume**
303[1] Channel	12	303 Waveform
303[1] Channel	13	303 Slide
303[1] Channel	14	303 Tune
303[1] Channel	15	303 Cutoff
303[1] Channel	16	303 Resonance
303[1] Channel	17	303 EnvMod
303[1] Channel	18	303 Decay
303[1] Channel	19	303 Accent
303[1] Channel	20	303 Level
303[1] Channel	21	303 MixerSelect
303[1] Channel	118	InputL Level
303[1] Channel	119	InputL MixerSelect

PART 2: 303 two (and audio input R)

MIDI Chan	MIDI Ctrl	Parameter
303[2] Channel	7	**Channel Volume**
303[2] Channel	12	303 Waveform
303[2] Channel	13	303 Slide
303[2] Channel	14	303 Tune
303[2] Channel	15	303 Cutoff
303[2] Channel	16	303 Resonance
303[2] Channel	17	303 EnvMod
303[2] Channel	18	303 Decay
303[2] Channel	19	303 Accent
303[2] Channel	20	303 Level
303[2] Channel	21	303 MixerSelect
303[2] Channel	118	InputR Level
303[2] Channel	119	InputR MixerSelect

PART 3: THE 808

MIDI Chan	MIDI Ctrl	Parameter
808 Channel	7	**Channel Volume**
808 Channel	12	---
808 Channel	13	808-BD Tone
808 Channel	14	808-BD Decay
808 Channel	15	808-BD Level
808 Channel	16	808-BD MixerSelect
808 Channel	17	808-SD Tune
808 Channel	18	---
808 Channel	19	808-SD Snappy
808 Channel	20	808-SD Level
808 Channel	21	808-SD MixerSelect
808 Channel	22	808-LT Sound
808 Channel	23	808-LT Tune
808 Channel	24	---
808 Channel	25	808-LT Level
808 Channel	26	808-LT MixerSelect
808 Channel	27	808-MT Sound
808 Channel	28	808-MT Tune
808 Channel	29	---
808 Channel	30	808-MT Level
808 Channel	31	808-MT MixerSelect
808 Channel	33	808-HT Sound
808 Channel	34	808-HT Tune
808 Channel	35	---
808 Channel	36	808-HT Level
808 Channel	37	808-HT MixerSelect

MIDI Chan	MIDI Ctrl	Parameter
808 Channel	38	808-RS Sound
808 Channel	39	808-RS Level
808 Channel	40	808-RS MixerSelect
808 Channel	41	808-CP Sound
808 Channel	42	808-CP Level
808 Channel	43	808-CP MixerSelect
808 Channel	44	808-CB Level
808 Channel	45	808-CB MixerSelect
808 Channel	46	---
808 Channel	47	808-CH Level
808 Channel	48	808-CH MixerSelect
808 Channel	49	808-OH Decay
808 Channel	50	808-OH Level
808 Channel	51	808-OH MixerSelect
808 Channel	52	808-CY Tone
808 Channel	53	808-CY Decay
808 Channel	54	808-CY Level
808 Channel	55	808-CY MixerSelect
808 Channel	56	---
808 Channel	57	---
808 Channel	58	---
808 Channel	118	808 Level
808 Channel	119	808 HatsChoke

PART 4: THE 909

MIDI Chan	MIDI Ctrl	Parameter
909 Channel	7	**Channel Volume**
909 Channel	12	909-BD Tune
909 Channel	13	909-BD Attack
909 Channel	14	909-BD Decay
909 Channel	15	909-BD Level
909 Channel	16	909-BD MixerSelect
909 Channel	17	909-SD Tune
909 Channel	18	909-SD Tone
909 Channel	19	909-SD Snappy
909 Channel	20	909-SD Level
909 Channel	21	909-SD MixerSelect
909 Channel	22	---
909 Channel	23	909-LT Tune
909 Channel	24	909-LT Decay
909 Channel	25	909-LT Level
909 Channel	26	909-LT MixerSelect
909 Channel	27	---
909 Channel	28	909-MT Tune
909 Channel	29	909-MT Decay
909 Channel	30	909-MT Level
909 Channel	31	909-MT MixerSelect
909 Channel	33	---
909 Channel	34	909-HT Tune
909 Channel	35	909-HT Decay
909 Channel	36	909-HT Level
909 Channel	37	909-HT MixerSelect

MIDI Chan	MIDI Ctrl	Parameter
909 Channel	38	---
909 Channel	39	909-RS Level
909 Channel	40	909-RS MixerSelect
909 Channel	41	---
909 Channel	42	909-CP Level
909 Channel	43	909-CP MixerSelect
909 Channel	44	---
909 Channel	45	---
909 Channel	46	909-CH Decay
909 Channel	47	909-CH Level
909 Channel	48	909-CH MixerSelect
909 Channel	49	909-OH Decay
909 Channel	50	909-OH Level
909 Channel	51	909-OH MixerSelect
909 Channel	52	909-CC Tune
909 Channel	53	---
909 Channel	54	909-CC Level
909 Channel	55	909-CC MixerSelect
909 Channel	56	909-RC Tune
909 Channel	57	909-RC Level
909 Channel	58	909-RC MixerSelect
909 Channel	118	**909 Level**
909 Channel	119	909 HatsChoke

PART 5: THE MIXER

MIDI Chan	MIDI Ctrl	Parameter
Mixer Chan	3	Mixer01 Aux1Send
Mixer Chan	8	Mixer01 Flags (*)
Mixer Chan	9	Mixer01 Aux2Send
Mixer Chan	11	Mixer02 Flags (*)
Mixer Chan	12	Mixer01 MixLevel
Mixer Chan	13	Mixer01 MixPan
Mixer Chan	14	Mixer02 Aux1Send
Mixer Chan	15	Mixer02 Aux2Send
Mixer Chan	16	Mixer02 MixLevel
Mixer Chan	17	Mixer02 MixPan
Mixer Chan	18	Mixer03 Aux1Send
Mixer Chan	19	Mixer03 Aux2Send
Mixer Chan	20	Mixer03 MixLevel
Mixer Chan	21	Mixer03 MixPan
Mixer Chan	22	Mixer04 Aux1Send
Mixer Chan	23	Mixer04 Aux2Send
Mixer Chan	24	Mixer04 MixLevel
Mixer Chan	25	Mixer04 MixPan
Mixer Chan	26	Mixer05 Aux1Send
Mixer Chan	27	Mixer05 Aux2Send
Mixer Chan	28	Mixer05 MixLevel
Mixer Chan	29	Mixer05 MixPan
Mixer Chan	30	Mixer06 Aux1Send
Mixer Chan	31	Mixer06 Aux2Send
Mixer Chan	33	Mixer06 MixLevel
Mixer Chan	34	Mixer06 MixPan
Mixer Chan	35	Mixer07 Aux1Send
Mixer Chan	36	Mixer07 Aux2Send
Mixer Chan	37	Mixer07 MixLevel
Mixer Chan	38	Mixer07 MixPan
Mixer Chan	39	Mixer08 Aux1Send
Mixer Chan	40	Mixer08 Aux2Send
Mixer Chan	41	Mixer08 MixLevel
Mixer Chan	42	Mixer08 MixPan
Mixer Chan	43	Mixer09 Aux1Send
Mixer Chan	44	Mixer09 Aux2Send
Mixer Chan	45	Mixer09 MixLevel
Mixer Chan	46	Mixer09 MixPan
Mixer Chan	47	Mixer10 Aux1Send
Mixer Chan	48	Mixer10 Aux2Send
Mixer Chan	49	Mixer10 MixLevel
Mixer Chan	50	Mixer10 MixPan
Mixer Chan	51	Mixer11 Aux1Send
Mixer Chan	52	Mixer11 Aux2Send
Mixer Chan	53	Mixer11 MixLevel

MIDI Chan	MIDI Ctrl	Parameter
Continued...		
Mixer Chan	54	Mixer11 MixPan
Mixer Chan	55	Mixer12 Aux1Send
Mixer Chan	56	Mixer12 Aux2Send
Mixer Chan	57	Mixer12 MixLevel
Mixer Chan	58	Mixer12 MixPan
Mixer Chan	59	Mixer13 Aux1Send
Mixer Chan	60	Mixer13 Aux2Send
Mixer Chan	61	Mixer13 MixLevel
Mixer Chan	62	Mixer13 MixPan
Mixer Chan	63	Mixer14 Aux1Send
Mixer Chan	67	Mixer14 Aux2Send
Mixer Chan	68	Mixer14 MixLevel
Mixer Chan	69	Mixer14 MixPan
Mixer Chan	70	Mixer15 Aux1Send
Mixer Chan	71	Mixer15 Aux2Send
Mixer Chan	72	Mixer15 MixLevel
Mixer Chan	73	Mixer15 MixPan
Mixer Chan	74	Mixer16 Aux1Send
Mixer Chan	75	Mixer16 Aux2Send
Mixer Chan	76	Mixer16 MixLevel
Mixer Chan	77	Mixer16 MixPan
Mixer Chan	78	Mixer17 Aux1Send
Mixer Chan	79	Mixer17 Aux2Send
Mixer Chan	80	Mixer17 MixLevel
Mixer Chan	81	Mixer17 MixPan
Mixer Chan	82	Mixer18 Aux1Send
Mixer Chan	83	Mixer18 Aux2Send
Mixer Chan	84	Mixer18 MixLevel
Mixer Chan	85	Mixer18 MixPan
Mixer Chan	86	Mixer19 Aux1Send
Mixer Chan	87	Mixer19 Aux2Send
Mixer Chan	88	Mixer19 MixLevel
Mixer Chan	89	Mixer19 MixPan
Mixer Chan	90	Mixer20 Aux1Send
Mixer Chan	91	Mixer20 Aux2Send
Mixer Chan	92	Mixer20 MixLevel
Mixer Chan	93	Mixer20 MixPan
Mixer Chan	94	Mixer21 Aux1Send
Mixer Chan	95	Mixer21 Aux2Send
Mixer Chan	96	Mixer21 MixLevel
Mixer Chan	97	Mixer21 MixPan
Mixer Chan	100	Mixer22 Aux1Send
Mixer Chan	101	Mixer22 Aux2Send
Mixer Chan	102	Mixer22 MixLevel
Mixer Chan	103	Mixer22 MixPan
Mixer Chan	104	Mixer23 Aux1Send

MIDI Chan	MIDI Ctrl	Parameter
Continued...		
Mixer Chan	105	Mixer23 Aux2Send
Mixer Chan	106	Mixer23 MixLevel
Mixer Chan	107	Mixer23 MixPan
Mixer Chan	108	Mixer24 Aux1Send
Mixer Chan	109	Mixer24 Aux2Send
Mixer Chan	110	Mixer24 MixLevel
Mixer Chan	111	Mixer24 MixPan
Mixer Chan	112	Mixer25 Aux1Send
Mixer Chan	113	Mixer25 Aux2Send
Mixer Chan	114	Mixer25 MixLevel
Mixer Chan	115	Mixer25 MixPan
Mixer Chan	116	Mixer26 Aux1Send
Mixer Chan	117	Mixer26 Aux2Send
Mixer Chan	118	Mixer26 MixLevel
Mixer Chan	119	Mixer26 MixPan

PART 6: THE EFFECTS

MIDI Chan	MIDI Ctrl	Parameter
Effects Channel	13	Dist1 Amount
Effects Channel	14	Dist1 Shape
Effects Channel	16	Dist2 Amount
Effects Channel	17	Dist2 Shape
Effects Channel	19	Dist3 Amount
Effects Channel	20	Dist3 Shape
Effects Channel	22	Dist4 Amount
Effects Channel	23	Dist4 Shape
Effects Channel	25	Comp1 Ratio
Effects Channel	26	Comp1 Threshold
Effects Channel	28	Comp2 Ratio
Effects Channel	29	Comp2 Threshold
Effects Channel	34	Comp3 Ratio
Effects Channel	35	Comp3 Threshold
Effects Channel	37	Comp4 Ratio
Effects Channel	38	Comp4 Threshold
Effects Channel	40	KFilt Type
Effects Channel	41	KFilt KeyToFreq
Effects Channel	42	KFilt Frequency
Effects Channel	43	KFilt Resonance
Effects Channel	44	KFilt Amount
Effects Channel	45	KFilt Decay
Effects Channel	46	KFilt Key Low
Effects Channel	47	KFilt Key High
Effects Channel	49	Delay1 Sync
Effects Channel	50	Delay1 Clock
Effects Channel	51	Delay1 Time
Effects Channel	52	Delay1 Feedback
Effects Channel	53	Delay1 Color
Effects Channel	54	Delay1 RevSend
Effects Channel	55	Delay1 MixLevel
Effects Channel	56	Delay1 MixPan
Effects Channel	58	Delay2 Sync
Effects Channel	59	Delay2 Clock
Effects Channel	60	Delay2 Time
Effects Channel	61	Delay2 Feedback
Effects Channel	62	Delay2 Color
Effects Channel	63	Delay2 RevSend
Effects Channel	70	Delay2 MixLevel
Effects Channel	71	Delay2 MixPan
Effects Channel	73	Delay3 Sync1
Effects Channel	74	Delay3 Clock1
Effects Channel	75	Delay3 Time1
Effects Channel	76	Delay3 Sync2
Effects Channel	77	Delay3 Clock2

MIDI Chan	MIDI Ctrl	Parameter
Continued...		
Effects Channel	78	Delay3 Time2
Effects Channel	79	Delay3 Feedback
Effects Channel	80	Delay3 Color
Effects Channel	81	Delay3 RevSend
Effects Channel	82	Delay3 MixLevel
Effects Channel	83	Delay3 MixPan1
Effects Channel	84	Delay3 MixPan2
Effects Channel	86	Reverb Predelay
Effects Channel	90	Reverb DecayTime
Effects Channel	91	Reverb Damping
Effects Channel	92	Reverb MixLevel

The next table shows the mixer Part parameters mapped to MIDI Polyphonic Pressure (parameters less used for continuous control), whose value can be changed using standard MIDI polyphonic pressure messages (0xAn, ctrl, value).

MIDI Chan	MIDI Ctrl	Parameter
Mixer Channel	0	Mixer01 Ins1Select
Mixer Channel	1	Mixer01 Ins2Select
Mixer Channel	2	Mixer01 Aux1Select
Mixer Channel	3	Mixer01 Aux2Select
Mixer Channel	4	Mixer02 Ins1Select
Mixer Channel	5	Mixer02 Ins2Select
Mixer Channel	6	Mixer02 Aux1Select
Mixer Channel	7	Mixer02 Aux2Select
Mixer Channel	8	Mixer03 Flags (*)
Mixer Channel	9	Mixer03 Ins1Select
Mixer Channel	10	Mixer03 Ins2Select
Mixer Channel	11	Mixer03 Aux1Select
Mixer Channel	12	Mixer03 Aux2Select
Mixer Channel	13	Mixer04 Flags (*)
Mixer Channel	14	Mixer04 Ins1Select
Mixer Channel	15	Mixer04 Ins2Select
Mixer Channel	16	Mixer04 Aux1Select
Mixer Channel	17	Mixer04 Aux2Select
Mixer Channel	18	Mixer05 Flags (*)
Mixer Channel	19	Mixer05 Ins1Select
Mixer Channel	20	Mixer05 Ins2Select
Mixer Channel	21	Mixer05 Aux1Select
Mixer Channel	22	Mixer05 Aux2Select
Mixer Channel	23	Mixer06 Flags (*)
Mixer Channel	24	Mixer06 Ins1Select
Mixer Channel	25	Mixer06 Ins2Select
Mixer Channel	26	Mixer06 Aux1Select
Mixer Channel	27	Mixer06 Aux2Select
Mixer Channel	28	Mixer07 Flags (*)
Mixer Channel	29	Mixer07 Ins1Select
Mixer Channel	30	Mixer07 Ins2Select
Mixer Channel	31	Mixer07 Aux1Select
Mixer Channel	32	Mixer07 Aux2Select
Mixer Channel	33	Mixer08 Flags (*)
Mixer Channel	34	Mixer08 Ins1Select
Mixer Channel	35	Mixer08 Ins2Select
Mixer Channel	36	Mixer08 Aux1Select
Mixer Channel	37	Mixer08 Aux2Select
Mixer Channel	38	Mixer09 Flags (*)
Mixer Channel	39	Mixer09 Ins1Select
Mixer Channel	40	Mixer09 Ins2Select
Mixer Channel	41	Mixer09 Aux1Select

MIDI Chan	MIDI Ctrl	Parameter
Continued...		
Mixer Channel	42	Mixer09 Aux2Select
Mixer Channel	43	Mixer10 Flags (*)
Mixer Channel	44	Mixer10 Ins1Select
Mixer Channel	45	Mixer10 Ins2Select
Mixer Channel	46	Mixer10 Aux1Select
Mixer Channel	47	Mixer10 Aux2Select
Mixer Channel	48	Mixer11 Flags (*)
Mixer Channel	49	Mixer11 Ins1Select
Mixer Channel	50	Mixer11 Ins2Select
Mixer Channel	51	Mixer11 Aux1Select
Mixer Channel	52	Mixer11 Aux2Select
Mixer Channel	53	Mixer12 Flags (*)
Mixer Channel	54	Mixer12 Ins1Select
Mixer Channel	55	Mixer12 Ins2Select
Mixer Channel	56	Mixer12 Aux1Select
Mixer Channel	57	Mixer12 Aux2Select
Mixer Channel	58	Mixer13 Flags (*)
Mixer Channel	59	Mixer13 Ins1Select
Mixer Channel	60	Mixer13 Ins2Select
Mixer Channel	61	Mixer13 Aux1Select
Mixer Channel	62	Mixer13 Aux2Select
Mixer Channel	63	Mixer14 Flags (*)
Mixer Channel	64	Mixer14 Ins1Select
Mixer Channel	65	Mixer14 Ins2Select
Mixer Channel	66	Mixer14 Aux1Select
Mixer Channel	67	Mixer14 Aux2Select
Mixer Channel	68	Mixer15 Flags (*)
Mixer Channel	69	Mixer15 Ins1Select
Mixer Channel	70	Mixer15 Ins2Select
Mixer Channel	71	Mixer15 Aux1Select
Mixer Channel	72	Mixer15 Aux2Select
Mixer Channel	73	Mixer16 Flags (*)
Mixer Channel	74	Mixer16 Ins1Select
Mixer Channel	75	Mixer16 Ins2Select
Mixer Channel	76	Mixer16 Aux1Select
Mixer Channel	77	Mixer16 Aux2Select
Mixer Channel	78	Mixer17 Flags (*)
Mixer Channel	79	Mixer17 Ins1Select
Mixer Channel	80	Mixer17 Ins2Select
Mixer Channel	81	Mixer17 Aux1Select
Mixer Channel	82	Mixer17 Aux2Select
Mixer Channel	83	Mixer18 Flags (*)
Mixer Channel	84	Mixer18 Ins1Select
Mixer Channel	85	Mixer18 Ins2Select
Mixer Channel	86	Mixer18 Aux1Select
Mixer Channel	87	Mixer18 Aux2Select

MIDI Chan	MIDI Ctrl	Parameter
Continued...		
Mixer Channel	88	Mixer19 Flags (*)
Mixer Channel	89	Mixer19 Ins1Select
Mixer Channel	90	Mixer19 Ins2Select
Mixer Channel	91	Mixer19 Aux1Select
Mixer Channel	92	Mixer19 Aux2Select
Mixer Channel	93	Mixer20 Flags (*)
Mixer Channel	94	Mixer20 Ins1Select
Mixer Channel	95	Mixer20 Ins2Select
Mixer Channel	96	Mixer20 Aux1Select
Mixer Channel	97	Mixer20 Aux2Select
Mixer Channel	98	Mixer21 Flags (*)
Mixer Channel	99	Mixer21 Ins1Select
Mixer Channel	100	Mixer21 Ins2Select
Mixer Channel	101	Mixer21 Aux1Select
Mixer Channel	102	Mixer21 Aux2Select
Mixer Channel	103	Mixer22 Flags (*)
Mixer Channel	104	Mixer22 Ins1Select
Mixer Channel	105	Mixer22 Ins2Select
Mixer Channel	106	Mixer22 Aux1Select
Mixer Channel	107	Mixer22 Aux2Select
Mixer Channel	108	Mixer23 Flags (*)
Mixer Channel	109	Mixer23 Ins1Select
Mixer Channel	110	Mixer23 Ins2Select
Mixer Channel	111	Mixer23 Aux1Select
Mixer Channel	112	Mixer23 Aux2Select
Mixer Channel	113	Mixer24 Flags (*)
Mixer Channel	114	Mixer24 Ins1Select
Mixer Channel	115	Mixer24 Ins2Select
Mixer Channel	116	Mixer24 Aux1Select
Mixer Channel	117	Mixer24 Aux2Select
Mixer Channel	118	Mixer25 Flags (*)
Mixer Channel	119	Mixer25 Ins1Select
Mixer Channel	120	Mixer25 Ins2Select
Mixer Channel	121	Mixer25 Aux1Select
Mixer Channel	122	Mixer25 Aux2Select
Mixer Channel	123	Mixer26 Flags (*)
Mixer Channel	124	Mixer26 Ins1Select
Mixer Channel	125	Mixer26 Ins2Select
Mixer Channel	126	Mixer26 Aux1Select
Mixer Channel	127	Mixer26 Aux2Select