

SX-I effector / synthesizer. (MK2)

USER AND INSTALLATION MANUAL

ver 1.3

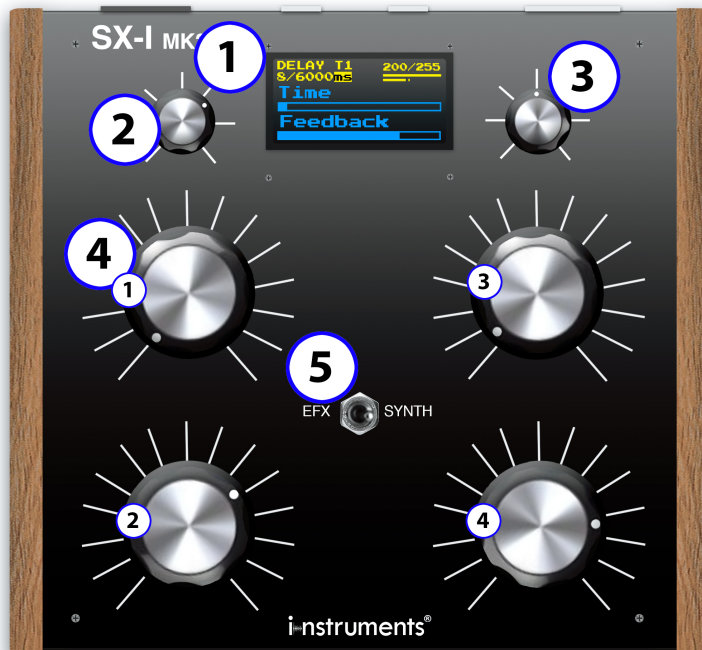


i-nstruments®

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1.0 FRONT PANEL

Tabletop Version



1. **Display OLED.**

2. **Infinite Encoder with pressure switch.** (Principally used to move between menus and for additional functions inside menus).

3. **Infinite Encoder with pressure switch.** (It commands specific functions in relation to the used menu).

4. **Potentiometers ALPS (1,2,3,4).** (Potentiometers for editing of the parameters of effects and settings, in relation to the used menu).

5. **Toggle switch.** (It modifies the global selection of the menus, from Synthesizer to Effector and vice versa).

1u Rack Module Version



1.1 CONNECTOR PANEL

Tabletop Version

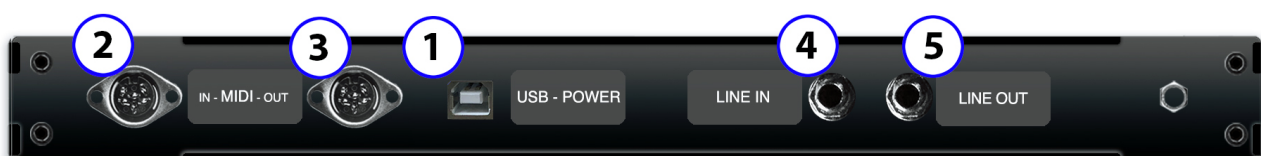


1. **USB connection** (MIDI Class Compliant). The USB connector is also used to recharge.

2. **Jack 3.5mm MIDI IN.** (3 pin) Tabletop / **DIN** 1u Rack Module Version

3. **Jack 3.5 mm MIDI OUT.** (3 pin) / **DIN** 1u Rack Module Version

1u Rack Module Version



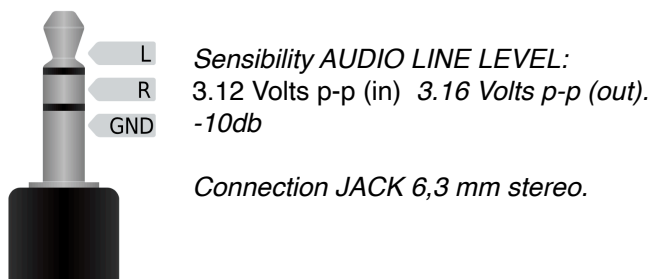
4. **Jack 6.3 mm AUDIO LINE IN** (Stereo).
5. **Jack 6.3 mm AUDIO LINE OUT** (Stereo).
6. **Battery Button I.O.** It activates or deactivates only the battery, so if used through supply or USB connection, the SX-I will turn on also if the button is set to "O". Set to "I" to recharge the battery when the USB is connected.

1.2 SPECIFICATIONS

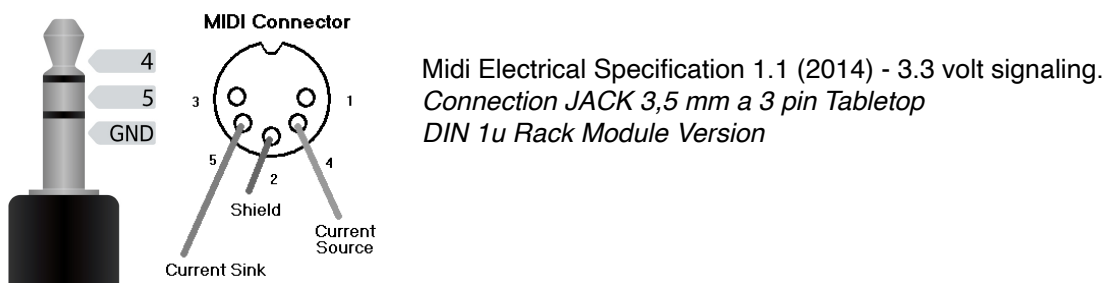
Effector: Delay (Max 6000ms), Reverb (Max 10sec), Granular, Bitcrusher, LFO, Flanger, Filters, Compressor, Phaser, Cubed special effect.

Synthesizer: White Noise, Pink Noise, Drums, 3 x VCO, FM / AM Modulation, VCF, Envelope.

AUDIO



MIDI



2.0 INSTALLATION.

SX-I is compatible with all the OSX and MacOS versions that support the MIDI device Class Compliant and with Microsoft Windows 7 and later. It doesn't need driver installation.

The MIDI mappings compatible with the use in the function "Controller" for NI Traktor Pro and Traktor Scratch Pro are available on www.i-nstruments.com

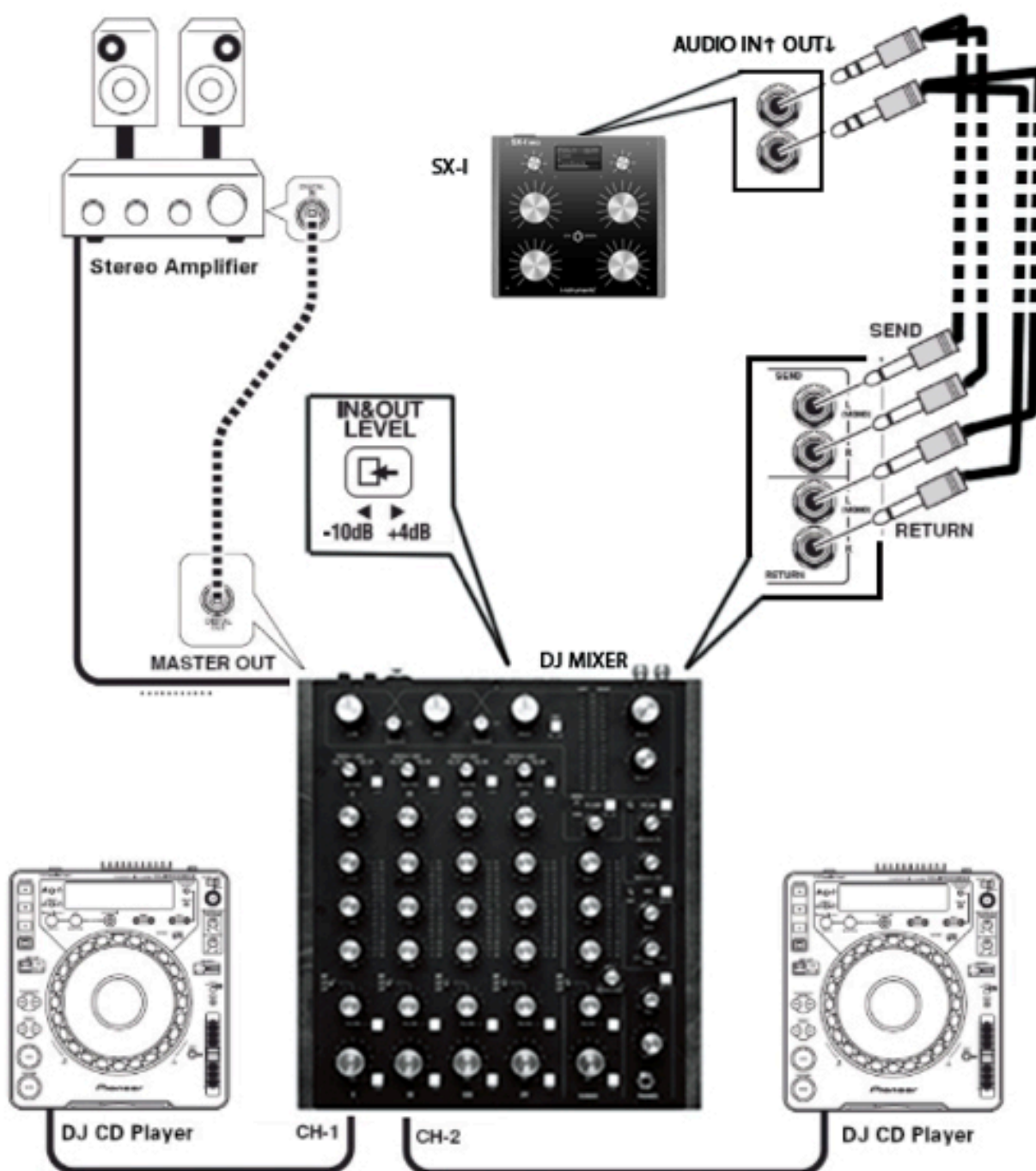
2.1 Mapping importation for the use in NI Traktor:

- make sure that SX-I is connected through USB
- open NI Traktor.
- click on "Preference Button" top right.
- click on "Controller Manager".

- in the section "Device Setup" click on "Add..".
- in the dropdown menu first select "Import TSI.." then "Import Other..".
- select the file containing the mappings.
- at the end of the importation make sure that in the section "Device Setup" the ports "In-Port & Out-Port" are set up on "All Ports".

2.2 MIXER connection.

SX-I can work with both MONO signals in one channel and STEREO signal in two channels. The attenuation's configuration to use is **-10db**. In the following diagram is shown an example of standard configuration with SEND / RETURN from mixer to SX-I.



3.0 DISPLAY



1. **Menu Name.** It indicates the name of the effect or of the synth on which you're working on, all the effects can work simultaneously regardless the active menu also in addition to synthesized sounds by the SX-I.

2. **Additional Information.** Details related to the menu on which you're working on. The example indicates the specific in ms of delays used (8) on the total of availables (6000).

3. **Potentiometers Details.** It is indicated the value of the last potentiometer used, from 0 to 255.

4. **Peak Level.** The higher slash shows the input audio level, the lower one the output level. If one of the levels is higher than 0db, the word "clip" will appear. In this case, it will be necessary to go to the "mixer" menu and edit the input and output volume (see 14.0 mixer).
5. **POT 1 / POT 3 indicator.** When one of the potentiometer n. 1 or n. 3 get commanded (see 1.0 front panel) the display indicator specifies the opening of the potentiometer, the values will be calculated based on the relative position.
6. **POT 2 / POT 4 indicator.** As over, but for the nr.2 and nr.4.

4.0 GLOBAL

To go into the "Global" menu, make sure that the toggle switch is on the left (see 1.0 front panel), so click one time the encoder on the left of the display (the item "menu" will be highlighted) and then turn it until it's arranged in the required menu.

In the Global section, it's possible to change the general D/W values, Reverb and Delay effects, the filter and activate the "OFF" feature, it's also possible to save and recall PRESET.

4.1 Reverb

It allows to set up the Reverb's quantity to add to the source's signal, the command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Reverb is zero, the input signal will be the same as the output one, so the Reverb won't be audible. The more you turn up the potentiometer, the more the Reverb will be marked. The Reverb of the GLOBAL menu commands the Reverb's Amount and increases automatically the Time in a logarithmic way until a maximum of 6 seconds when the potentiometer is at maximum. (see 6.0 Reverb).

4.2 Delay

It allows to set up the quantity of delay to add to the source signal. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When the Delay is set on zero, the input signal will be the same as the output one, so the delay won't be audible. The more you turn up the potentiometer, the more the Delay will be marked. The delay of the GLOBAL menu commands the Amount of all the delays (T1, T2, T3) and it increases automatically the feedback until the 50% of the potentiometer's value. It's possible to vary the Time of the delays getting into the "Delay" menu (see 5.0 Delay). Default time is set up on 120 ms and the Delay T1 is the only one activated.

4.3 Filter

It allows to filter in high pass the input signal in the SX-I. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel). When the Filter is set on zero, the signal won't be filtered. If the potentiometer is at the maximum, the SX-I will process only the frequencies higher than 400hz.

4.4 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

4.5 Preset

It's possible to memorize and recall up to 10 preset (from 0 to 9). The preset memorizes all the setups of all the menus and the parameters of effects and synth.

Preset's memory is permanent and it won't be lost in case of shutdown, battery discharge.

The number of current preset is indicated on the menu's item "Global".

To save or charge a preset it is necessary to be placed on the memory that we want to use, rotate the encoder on the right of the display, when you are on the number of desired preset the character "#" will be highlighted, then press the same encoder once.

It will appear the item "READ / WRITE" (reading). Rotating again the encoder it will appear the item with the opposite selection "READ / WRITE" (writing), press the encoder when you are on the required option.

4.5 OFF

This feature is available in SX-I Effector / Synthesizer MK2 PRO version only.

It allows to mute the input signal of effects, this feature allows to play the natural sound effects evolution until the end while the original input signal is active.

It's possible to mute the effects pressing the encoder on the right of the display and the item "OFF" is visible on the display. Press the encoder again to reactivate the input signal of the effects.

5.0 Delay

To get into the "Delay" menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item "menu" will be highlighted) and afterwards turn it until it's arranged on the required menu.

In the Delay section the Delay effect's setup can be managed, in the SX-I there are 3 different delays that can work simultaneously (see 5.4 Max Delay Time) and they have a personal setup menu. The maximum time usable of the 3 delays is 6.000ms (6 seconds).

For each delay, it's possible to edit the "Amount" (quantity of effect to be added to the source), the "Feedback" (quantity of signal processed to be sent back to the input of all the delays), the "Time" (delay's time) and the general "D/W" (quantity of the effect to be added to the source).

5.1 Amount

It allows to set up delay's quantity to add to the source's signal, the command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Amount is set on zero, the input signal will be the same as the output one, so the delay won't be audible. If the Amount is at maximum, the input signal will totally be above the effects.

5.2 Feedback

It allows to set up the signal's quantity to send back in the input to the delays. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When the Feedback is set on zero, the signal won't be sent to the input. If the potentiometer is at the maximum, the signal of the delay will be sent in the input to the same effect.

5.3 Time

To set up the time it's necessary to rotate the potentiometer nr. 3 (see 1.0 front panel). When the potentiometer is at the minimum the time is 0ms (so the delay is null), when the potentiometer is at the maximum the time is "max delay time" already set up (see 5.4 Max Delay Time).

It's possible to set up the delay's time using the TAP-TIME, pressing repeatedly timed the encoder on the right of the display. The "time" already set up will be the one which elapses between two pressures and it's not considered the position of the potentiometer nr. 3.

If a midi clock signal is available and the midi channel is configured to "EXTERNAL" in the controller menu (see 25.0 Controller), the TAP-TIME is disabled and the SX-I consider the midi clock only.

Once we have selected the delay's time it's possible to subdivide it in 1/4 or 1/3 or multiple synchronous rotating the encoder to the left of the display.

5.4 Max Delay Time

"Max Delay Time" means the maximum time that can be used by the Delay that you are using. This information is shown under the item of the "Delay" menu.

For example, if we have a value that indicates "400/6000ms" it means that the Max Delay Time is 6000ms and that you have a Delay's Time set up in 400ms.

The maximum value usable in total by the SX-I is 6000ms and if you want to use more delays simultaneously it's necessary to reduce the Max Delay Time of the first delay to free the Time usable for the next one, idem for the third delay's menu usable. If there is not availability of "Max Delay Time" for the following delay's menus, delays 2 and 3 won't be displayed.

To vary the "Max Delay Time" value it's necessary to rotate the encoder on the right of the display.

5.5 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

5.6 TAPE DELAY

*This kind of Delay is available in the SX-I Effector / Synthesizer MK2 **PRO** version only.*

It's a type of delay that uses analog recording tape to achieve the effect. Back in the "old days", producers and engineers created delay effects using tape machines that makes the pitch of the sounds when the time is changed. It's possible to change the type of delay setting up TAPE in the "Mixer" menu (see 14.0 Mixer).

5.7 HR

This parameter is available when the Delay type is setting up to TAPE (see 14.0 Mixer).

HR is how long it takes for the "read head" to get to the desired delay time. 0 is as quickly as possible, 10 is a standard tape delay sound and 20 is getting a little slow and crazy.

To vary the "HR" value it's necessary to rotate the encoder on the right of the display.

5.8 OFF

*This feature is available in SX-I Effector / Synthesizer MK2 **PRO** version only.*

It allows to mute the input signal of effects, this feature allows to play the natural sound effects evolution until the end while the original input signal is active.

It's possible to mute the effects pressing the encoder on the right of the display and the item "OFF" is visible on the display. Press the encoder again to reactivate the input signal of the effects.

5.9 **PING-PONG**

*This feature is available in SX-I Effector / Synthesizer MK2 **PRO** version only.*

It allows to have a signal delayed from right and left output channel like a ping-pong.

It's possible to change the Delay FB type setting in the "Mixer" menu (see 14.0 Mixer).

6.0 **Reverb**

To get into the "Reverb" menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item "menu" will be highlighted) and afterwards rotate it until it's placed in the required menu.

In the Reverb section the setup of the same effect can be managed. In the SX-I all the effects can work simultaneously. It's possible to edit the "Amount" (the effect's quantity to add to the source), the "Roomsize" (time of reverb), the "Damping" (attenuation factor) and it's possible to change the general D/W values.

6.1 **Amount**

It allows to set up the quantity of Reverb that can be added to the source signal. The command can be done rotating the potentiometer nr.1 (see 1.0 front panel). When the Amount is set on zero, the input signal will be the same as the one in the output, when the reverb won't be audible, the more you turn up the potentiometer the more the reverb will be marked.

6.2 **Roomsize**

To set up the reverb's roomsize it's necessary to rotate the potentiometer nr. 2 (see 1.0 front panel). When the potentiometer is at the minimum, the time is 0ms (so the reverb will be very short). When the potentiometer is at the maximum, the time is 10 seconds.

6.3 **Damping**

To set up the reverb's damping it's necessary to rotate the potentiometer nr. 3 (see 1.0 front panel). More damping causes higher frequency echo to decay, creating a softer sound, similar to a large room filled with people or materials which absorb some sound as it travels between reflecting surfaces. Lower damping simulates a harsher reverberant field.

6.4 **D/W**

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

6.5 **OFF**

*This feature is available in SX-I Effector / Synthesizer MK2 **PRO** version only.*

It allows to mute the input signal of effects, this feature allows to play the natural sound effects evolution until the end while the original input signal is active.

It's possible to mute the effects pressing the encoder on the right of the display and the item "OFF" is visible on the display. Press the encoder again to reactivate the input signal of the effects.

7.0 Granular

To get into the “Granular” menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it’s placed on the required menu.

In the Granular section the setup of the same effect can be managed. In the SX-I all the effects can work simultaneously. It’s possible to edit the “Amount” (the effect’s quantity to add to the source), the type of the granular sample (Pitch Shift or Freeze), the sample “Speed”, the sample “Length” and the general “D/W” (quantity of the effect to be added to the source).

7.1 Pitch Shift / Freeze

It’s possible to change the granular type of sample rotating and pressing the encoder on the right of the display. The item “Freeze or Pitch” is visible on the display, under the item “GRANULAR”.

7.2 Amount

It allows to set up the quantity of effect to be added to the source signal. The command is done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Amount is set on zero the input signal will be the same as the one on output, so the effect won’t be audible. The more you increase the potentiometer the more the effect will be marked. It’s possible to reset the amount instantly pressing the encoder on the right of the display.

7.3 Speed

To set up the Speed it’s necessary to rotate the potentiometer nr. 2 (see 1.0 front panel). It allows to set up the velocity of Granular sample.

7.4 Length

To set up the Length it’s necessary to rotate the potentiometer nr. 3 (see 1.0 front panel). It allows to set up the Pitch or Freeze of sample length. Pitch shift by continuously sampling grains and playing them at altered speed.

7.5 D/W

It allows to set up the effects’ quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won’t be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal. This D/W general function is available in all the effects menu and in the Noise menu and it’s always corresponding at the potentiometer nr. 4.

7.6 OFF

This feature is available in SX-I Effector / Synthesizer MK2 PRO version only.

It allows to mute the input signal of effects, this feature allows to play the natural sound effects evolution until the end while the original input signal is active.

It’s possible to mute the effects pressing the encoder on the right of the display and the item “OFF” is visible on the display. Press the encoder again to reactivate the input signal of the effects.

8.0 Bitcrusher

To get into the “Bitcrusher” menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Bitcrusher section the setup of the same effect can be managed. In the SX-I all the effects can work simultaneously. It is possible to edit the "Freq." (Sampling Frequency) and the "Bit" (intensity of the signal) and the general "D/W" (quantity of the effect to be added to the source).

8.1 Freq.

It allows to set up the sampling frequency of the audio signal in output from SX-I. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the potentiometer is at the minimum, the input signal will be the same as the one in the output and the sampling frequency will be 44 Khz, the effect won't be audible, the more we increase the potentiometer the more the sampling frequency will decrease and the effect will be marked.

8.2 Bit

It allows to set up the intensity by bit of the audio signal sampling in output from SX-I. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When the potentiometer is at the minimum, the input signal will be the same as the one in the output and the sampling bit will be 16 the effect won't be audible, the more you increase the potentiometer the more the bit will decrease and the effect will be marked.

8.3 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

9.0 LFO

To get into the "LFO" menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder at the right of the display and afterwards rotate it until it is placed on the required menu.

In the LFO section the same effect's setup can be managed. In the SX-I all the effects can work simultaneously. It's possible to edit the "Amount" (quantity of the effect to be added to the source), the "Freq." (oscillator frequency), to activate the VCF (cut frequency of the low pass filter in filter menu), and the general "D/W" (quantity of the effect to be added to the source).

It's possible to vary the LFO waveform between SINE, SAWTOOTH / REVERSESQUARE, TRIANGLE, PULSESAMPLE HOLD. To edit the waveform, it is necessary to rotate the encoder on the right of the display, the used waveform will be visible on the display under the item "LFO" of the menu.

9.1 Amount

It allows to set up the LFO's quantity that can be added to the source signal. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Amount is set on zero, the input signal will be the same as the one in output, the effect won't be audible, the more we increase the potentiometer the more the effect will be marked.

9.2 Freq.

It allows to set up the oscillator frequency of LFO. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When the potentiometer is at the minimum, the input signal will be the same as the one in output and the effect won't be audible, the more you turn up the potentiometer the more the frequency will increase and the amplitude changes will be fast.

9.3 VCF

It allows to use the LFO oscillator for command the cut frequency of the lowpass filter of the filter menu (see 11.0 Filters), The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel).

If you want to make the VCF work you must enable the filter of the filter menu and setting up the cut frequency of the "LowPass".

When the potentiometer is at the minimum, the cut frequency don't change, the more you turn up the potentiometer the more the cut frequency change and it will be fast.

9.4 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

9.5 EXTERNAL SYNC

If a midi clock signal is available and the midi channel is configured to "EXTERNAL" in the controller menu (see 25.0 Controller), the LFO phase will be set to zero whenever a beat midi clock is received.

10.0 Flanger

To get into the "Flanger" menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item "menu" will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Flanger section the same effect's setup can be managed. In the SX-I the effects can work simultaneously. It is possible to edit the "Amount" (quantity of the effect to be added to the source), the waveform time of flanger and the general "D/W" (quantity of the effect to be added to the source).

10.1 Amount

It allows to set up the Flanger's quantity that should be added to the source signal. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Amount is set on zero, the input signal will be the same as the one in output, the effect won't be audible, the more you turn up the potentiometer the more the effect will be marked.

10.2 Tempo

The Flanger effect's time can be varied rotating the encoder on the right of the display. Values vary from 0 seconds (the flanger oscillator doesn't generate the sine wave of the effect) to 1.55 seconds.

10.3 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

11.0 FILTERS

To get into the "Filters" menu, make sure that the toggle switch is placed on the left (see 1.0 front panel),

then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Filters section the filters setup can be managed. In the SX-I the effects can work simultaneously. It is possible to edit the HiPass and LowPass cut frequencies and filters and the resonances.

11.1 ON / OFF

It is possible to turn on or off the filters pressing the encoder on the right of the display. The item “ON or OFF” is visible on the display, under the item “FILTERS”.

11.2 HiPass

It allows to filter in high pass the output signal. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the HiPass is set on zero, the signal won't be filtered, the frequency is set on 15khz when the HiPass is set on maximum the frequency is set on 0hz (total cutoff).

11.3 LowPass

It allows to filter in low pass the output signal. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel). When the LowPass is set on maximum, the signal won't be filtered, the frequency is set on 0khz when the LowPass is set on zero the frequency is set on 15khz (total cutoff).

11.4 Resonance

It allows to set up the resonance db corresponding to the cut frequency. The command can be done rotating the potentiometer nr. 2 for the HiPass filter and nr. 4 for the LowPass filter (see 1.0 front panel). When Resonance is set on zero, the filter's cut won't have resonance peaks. When the potentiometer is turned up, the resonance increases until a maximum of 5db.

12.0 CUBED

To get into the “Cubed” menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Cubed section the same effect's setup can be managed. This special effect creates all the tension you need in your music for the drop. It's possible to edit the “Synth” (oscillator amplitude), It's possible to vary the OSC1 waveform between SINE, SAWTOOTH / REVERSESQUARE, TRIANGLE, PULSESAMPLE HOLD and the Cubed effect amount. To edit the waveform, it is necessary to rotate the encoder on the right of the display, the used waveform will be visible on the display under the item “CUBED” of the menu.

12.1 Synth

It allows to set up the Oscillators volumes that should be added to the source signal. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Synth is set on zero, the input signal will be the same as the one in output, the Oscillators won't be audible, the more you turn up the potentiometer the more the Oscillators will be marked.

12.2 OSC Freq.

It allows to set up the basic frequency of the modulated oscillators. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When “OSC freq.” is set on zero, the synthesizer generates a wave with the frequency corresponding to 0 Hz. Turning up the potentiometer at this frequency, the potentiometer's value is added until a maximum of 1000Hz.

12.3 Cubed

It allows to set up the Cubed's quantity that should be added to the source signal. The command can be

done rotating the potentiometer nr. 4 (see 1.0 front panel). This special effect creates all the tension you need in your music. When the Cubed is set on zero, the input signal will be the same as the one in output, the effect won't be audible, the more you turn up the potentiometer the more the effect will be marked.

12.4 OFF

This feature is available in SX-I Effector / Synthesizer MK2 **PRO** version only.

It allows to mute the input signal of effects, this feature allows to play the natural sound effects evolution until the end while the original input signal is active.

It's possible to mute the effects pressing the encoder on the right of the display and the item "OFF" is visible on the display. Press the encoder again to reactivate the input signal of the effects.

13.0 COMPRESSOR

To go into the "Compressor" menu, make sure that the toggle switch is on the left (see 1.0 front panel), so click one time the encoder on the left of the display (the item "menu" will be highlighted) and then turn it until it is arranged in the required menu.

In the Compressor section, it is possible to change the value of the Auto Volume Control (AVC / Compressor).

13.1 ON / OFF

It is possible to turn on or off the compressor pressing the encoder on the right of the display. The item "ON or OFF" is visible on the display, under the item "COMPRESSOR".

13.2 Pre / Post

It allows to set up the Compressor signal position to Pre (before effects) and Post (after effects).

13.3 Gain

It allows to edit the maximum gain that can be applied for expanding, and can take one of three values: 0dB, 6.0dB and 12dB.

To change this value it is necessary to be placed on the Gain, rotate the encoder on the right of the display then press the same encoder once.

13.4 Resp

It allows to edit the integration time for the compressor and can take four values: 0ms, 25ms, 50ms or 100ms. Larger values average the volume over a longer time, allowing short-term peaks through.

To change this value it is necessary to be placed on the Resp, rotate the encoder on the right of the display then press the same encoder once.

13.5 HardLim

It allows to edit the Hard Limit function, if hardLimit is OFF, a 'soft knee' compressor is used to progressively compress louder values which are near or above the Threshold (the louder they are, the greater the compression). If it is ON, a hard compressor is used (all values above the Threshold are the same loudness).

To change this value it is necessary to be placed on the HardLim, rotate the encoder on the right of the display then press the same encoder once.

13.6 Threshold

It allows to edit the threshold of the compressor, the command can be done rotating the potentiometer nr. 2 (see 1.0 front panel).

The value is in dBFS and can take from 0 to -60.

13.7 Attack

It allows to edit the Attack, the command can be done rotating the potentiometer nr. 3 (see 1.0 front panel). Attack is a controlling the rate of decrease the gain when the signal is over Threshold, in dB/s.

13.8 Decay

It allows to edit the Attack, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). Decay controls how fast gain is restored once the level drops below Threshold, again in dB/s. It is typically set to a longer value than Attack.

14.0 MIXER

To go into the "Mixer" menu, make sure that the toggle switch is on the left (see 1.0 front panel), so click one time the encoder on the left of the display (the item "menu" will be highlighted) and then turn it until it is arranged in the required menu.

In the Mixer section, it is possible to change the gain value for the input and the output audio, it's possible to turn on or off the Noise Gate, setup Stereo or Mono, the type of the Delay d/w method and for the SX-I Effector / Synthesizer MK2 **PRO** version only, the Delay Type, Delay FB and Surround.

14.1 Input

It allows to edit the input's gain of the signal. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When the input is at the maximum the gain is 0db. When the input is at the minimum the signal is at – infinity. If the input or the output signal surpasses the 0db, it will appear on the display the item "clip", in this case it is necessary to operate on the gains to avoid the distortion of the signal.

14.2 Output

It allows to edit the gain of output signal. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel) with the same modality explained in the input command.

14.3 GATE ON / OFF

It is possible to turn on or off the noise gate of input signals (see 27.0 general diagram), rotating and pressing the encoder on the right of the display.

The item "GateON or GateOFF" is visible on the display, under the item "MIXER".

14.4 STEREO / MONO

It is possible to vary the output signals between Stereo and Mono, rotating and pressing the encoder on the right of the display

The item "ST or MO" is visible on the display, under the item "MIXER".

14.5 DELAY MODE

It's possible to vary the d/w method of the delay between Full or Half, rotating and pressing the encoder on the right of the display. The item "HALF or FULL" is visible on the display, under the item "MIXER".

When the delay mode is set to Full the d/w of the delay effect will be set to 100% max, if the mode is set to Half the d/w of the delay effect will be set to 50% and you can hear the original signal and the delayed signal simultaneously.

14.6 DELAY TYPE

This kind of Delay is available in the SX-I Effector / Synthesizer MK2 **PRO** version only.

It is possible to vary the type of Delay between Standard and Tape.

When the delay type is set to "Standard" the effect will be clean without pitch effect when the time is changed, if the type is set to "Tape" the Delay works like an analog recording tape to achieve the effect. Back

in the “old days”, producers and engineers created delay effects using tape machines that makes the pitch of the sounds when the time is changed.

14.7 DELAY FB

*This feature is available in the SX-I Effector / Synthesizer MK2 **PRO** version only.*

It is possible to vary the DELAY FB type between Normal and Ping-Pong.

14.8 SURROUND

*This feature is available in the SX-I Effector / Synthesizer MK2 **PRO** version only.*

Enable virtual surround processing, to give a broader and deeper stereo image (even with mono input).

15.0 PHASER

*This effect is available in the SX-I Effector / Synthesizer MK2 **PRO** version only.*

To get into the “Phaser” menu, make sure that the toggle switch is placed on the left (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Phaser section the setup of the same effect can be managed. In the SX-I all the effects can work simultaneously. It's possible to edit the “Amount” (the effect's quantity to add to the source), the frequency of the phaser filters, the oscillator frequency of LFO and the general “D/W” (quantity of the effect to be added to the source).

15.1 Amount

It allows to set up the quantity of effect to be added to the source signal. The command is done rotating the potentiometer nr. 1 (see 1.0 front panel). When the Amount is set on zero the input signal will be the same as the one on output, so the effect won't be audible. The more you increase the potentiometer the more the effect will be marked. It's possible to reset the amount instantly pressing the encoder on the right of the display.

15.2 Freq.

It allows to set up the frequency filters frequency of phaser. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel).

15.3 LFO

It allows to set up the the oscillator frequency of LFO in the phaser effect.
The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel).

15.4 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

20.0 Noise

To get into the “Noise” menu, make sure that the toggle switch is placed on the right (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Noise section the synthesizer's setup that generates the White and Pink noise can be managed. It is possible to edit the quantity of "White" (white noise), of "Pink" (pink noise), both can be used simultaneously and the general "D/W" (quantity of the effect to be added to the source).

20.1 White

It allows to set up the quantity of white noise that should be generated. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the White is set on zero, the synthesizer doesn't generate any sound, vice versa if you turn up the potentiometer, the white noise's db can be increased.

20.2 Pink

It allows to set up the quantity of Pink noise that should be generated. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When the Pink is set on zero, the synthesizer doesn't generate any sound, vice versa if you turn up the potentiometer, the pink noise's db can be increased.

20.3 D/W

It allows to set up the effects' quantity to add to the source signal, the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the D/W is set on zero, the input signal will be the same as the one in the output, then all effects won't be audible. When the D/W is at maximum, the input signal will totally be over the effects and in the output, there will be only the processed signal.

This D/W general function is available in all the effects menu and in the Noise menu and it's always corresponding at the potentiometer nr. 4.

21.0 Drums

To get into the "Drums" menu, make sure that the toggle switch is placed on the right (see 1.0 front panel), then press once the encoder on the left of the display (the item "menu" will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the Drums section, synthesis' setup of the percussive sound can be managed. It is possible to turn on or off the synthesizer, editing the Frequency (percussion's frequency), editing the "Length" (sound's length), the "Second Mix" (sound's duplication) and the "Pitch".

The sound is generated through the MIDI IN signal from a keyboard or from a sequencer. The used MIDI channel can be varied editing the channel parameter in the "Controller" menu (see 25.0 controller).

As for every synthesizer, from the SX-I it is possible to add to the synthesis all the effects available in the effects' menu (visible when the toggle switch is placed on the left, see 1.0 front panel).

21.1 ON / OFF

It is possible to turn on or off the synthesizer of drums pressing the encoder on the right of the display. The item "ON or OFF" is visible on the display, under the item "DRUMS". When the synthesis of Drums or Synth is activated, the item "MIDI" will appear on the display instead of Peak Level (see 3.0 Display).

21.2 Frequency

It allows to set up the percussion's frequency. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When "Frequency" is set on zero, the synthesizer generates a percussion with a frequency correspondent to the midi note received. Increasing the potentiometer to this frequency, you can add the potentiometer's value until a maximum of +150hz

21.3 Length

It allows to set up the length of the percussive sound tail. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel). When "Length" is set on zero, the synthesizer generates a dry percussion without any release. If the potentiometer is increased, you will have a fade out of 450ms maximum.

21.4 Second Mix

It allows to double the percussive sound. It is possible to manage the sound's quantity added to the original one. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel). When "Second Mix" is set on zero the synthesizer generates a single percussion. If the potentiometer is increased the additional sound is added to the original one until it is doubled when the potentiometer is set on the maximum. This function generates a sound like two identical percussions played almost simultaneously.

21.5 Pitch

Pitch allows to edit the synthesized sound's pitch, changing the timbre. The command can be done rotating the potentiometer nr. 4 (see 1.0 front panel).

22.0 Synth OSC

To get into the "Synth OSC" menu, make sure that the toggle switch is placed on the right (see 1.0 front panel), then press once the encoder on the left of the display (the item "menu" will be highlighted) and afterwards rotate it until it is placed on the required menu. In the "Synth OSC" section you can manage the synthesis setup of the oscillator modulable on frequency (FM) or amplitude (AM). It is possible to turn on or off the synthesizer, to edit the Oscillators frequency (basic frequency of the modulated oscillators) and Amplitude.

It's possible to vary the waveform between SINE, SAWTOOTH / REVERSESQUARE, TRIANGLE, PULSESAMPLE HOLD. To edit the waveform, it's necessary to rotate the encoder on the right of the display to the OSC requested waveform and then it's necessary to rotate the encoder on the left of display, the used waveform will be visible on the display under the item "Synth OSC" of the menu.

The sound is generated through the MIDI IN signal from a keyboard or from a sequencer. The used MIDI channel can be varied editing the channel parameter inside the "Controller" (see 25.0 controller).

As for all the sounds synthesized from the SX-I, it's possible to add to the synthesis the effects available in the effect's menu (visible when the toggle switch is placed on the left, see 1.0 front panel).

22.1 ON / OFF

It is possible to turn on or off the synthesizer pressing the encoder on the right of the display. The item "ON or OFF" is visible on the display, under the item "SYNTH OSC". When the synthesis of Drums or Synth is activated, the item "MIDI" will appear on the display instead of Peak Level (see 3.0 Display)

22.2 OSC 1/2

It allows to set up the Oscillators amplitude. The command can be done rotating the potentiometer nr. 1 for the OSC1 and nr.2 for the OSC2 (see 1.0 front panel). When the OSC is set on zero the Oscillator is disabled, the more you turn up the potentiometer the more the Oscillators amplitude will be marked.

22.3 Tune

It allows to increase the base frequency of the OSC2. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel).

It creates an de-tune effect and generates a lot of harmonic waves typical of the analog synthesizers.

22.4 Freq.

It allows to set up the basic frequency of the modulated oscillators. The command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When "Freq." is set on zero, the synthesizer generates a wave with the frequency corresponding to the received midi note. Turning up the potentiometer at this frequency, the potentiometer's value is added until a maximum of +800Hz.

23.0 Modul FM

To get into the “Modul FM” menu, make sure that the toggle switch is placed on the right (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it's placed on the required menu.

In the “Modul FM” section you can manage the synthesis setup of the oscillator frequency modulator (FM). It's possible change the VCO amplitude, to edit the frequency of modulator oscillator, the “Offset” (add a DC offset, from -1.0 to +1.0) and the octave sensibility.

It's possible to vary the waveform between SINE, SAWTOOTH / REVERSESQUARE, TRIANGLE, PULSESAMPLE HOLD. To edit the waveform, it's necessary to rotate the encoder on the right of the display, the used waveform will be visible on the display under the item “Modul FM” of the menu.

The sound is generated through a MIDI IN signal from a keyboard or from a sequencer. The used MIDI channel can be varied editing the channel parameter in the “Controller” menu (see 25.0 Controller).

As for all the sounds synthesized from the SX-I, it's possible to add to the synthesis the effects available in the effect's menu (visible when the toggle switch is placed on the left, see 1.0 front panel).

23.1 VCO

It allows to set up the Oscillators amplitude. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When the VCO is set on zero the FM modulation is disabled, the more you turn up the potentiometer the more the FM modulation will be marked.

23.2 Freq.

It allows to set up the frequency of the modulator oscillator. The command can be done rotating the potentiometer nr. 2 (see 1.0 front panel).

23.3 Offset.

It allows to set up the Offset of the modulator oscillator. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel).
This parameter add a DC offset, from -1.0 to +1.0.

23.4 Octaves

It allows to set up the sensibility of FM modulation in Octave. the command can be done rotating the potentiometer nr. 4 (see 1.0 front panel).
When the Octave is set on zero the FM modulation sensibility is low, the more you turn up the potentiometer the more the FM modulation sensibility will be marked until +12 Octave.

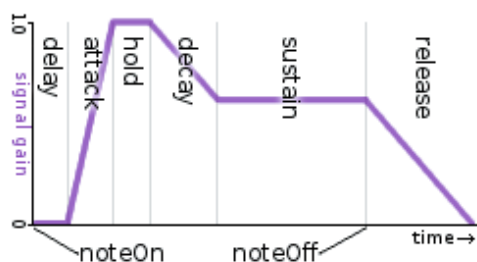
24.0 Envelope

To get into the “Envelope” menu, make sure that the toggle switch is placed on the right (see 1.0 front panel), then press once the encoder on the left of the display (the item “menu” will be highlighted) and afterwards rotate it until it is placed on the required menu.

In the “Envelope” section envelope generator's setup can be managed. It is possible to edit the Attack (attack time of the note), the “Decay” (decadence time of the note), the “Sustain” (note's volume) and the “Release” (note's tail).

In the following diagram, there are indicated standard phases of a envelope:

Modify a signal with a DAHDSR (Delay Attack Hold Decay Sustain Release) envelope.



24.1 Attack

It allows to set up the time of the note's delayed attack. The command can be done rotating the potentiometer nr. 1 (see 1.0 front panel). When Attack is set on zero, the attack is immediate. When the potentiometer is turned up, the time increases generating a "fade in" effect until a maximum delay of 30ms.

24.2 Decay

It allows to set up the note's decadence before arriving at the sustain's level. The command can be done rotating the potentiometer nr.2 (see 1.0 front panel). When Decay is set on zero, the note reach at the same value of the sustain. When the potentiometer is turned up, the time increases generating a "fade" effect at the sustain point until a maximum delay of 200ms

24.3 Sustain

It allows to set up the sustain level of the note. The command can be done rotating the potentiometer nr. 3 (see 1.0 front panel). When Sustain is set on zero, the sustain's phase of the envelope won't be audible. When the potentiometer is turned up, the sustain increases until a maximum of 0db.

24.4 Release

It allows to set up the delay in the note's closing. The command can be done rotating the potentiometer nr. 4 (see 1.0 front panel). When the Release is set on zero the detachment is immediate. When the potentiometer is turned up, the time increases generating a "fade out" effect until a maximum delay of 200 ms.

25.0 Controller

To get into the "Controller" menu, make sure that the toggle switch is placed on the right (see 1.0 front panel), then press once the encoder on the left of the display (the item "menu" will be highlighted) and afterwards rotate it until it is placed on the required menu.

When you are inside the "Controller" menu, the SX-I becomes a MIDI IN-OUT controller both analogical and USB. It is possible to edit the used channel and this parameter involves the editing of the used channel also by Drums and Synth. All the potentiometer and the encoders, as the button and the toggle switch, become mappable in midi out. On the display the Peak's indications, Clip and the potentiometers' slashes are mappable in midi in.

25.1 Selection of the MIDI channel

To select the midi channel used in the Controller's function and of Synthesis, it is necessary to rotate the encoder placed on the right of the display. The available channels are 8, from ch. 1 to 8.

If you set up the midi channel nr.9, the item "Midi Ch. DJ-I - External." will appear on the display. In this modality, the SX-I receives midi CC signals for the regulation via external controller of the GLOBAL section (see point 4.0), both in input and output. The channel midi 9 cc 70 corresponds to the D/W, the cc 71 corresponds to the Reverb, the cc 72 to the Delay, the cc 73 to the Filter. The editing of the GLOBAL parameters remains in effect in each menu, both effects and synth and the Drums & Synth synthesis is commanded only by the midi notes received on the channel nr. 1. In this configuration the TAP-TIME of the delay effects will be synchronized to the midi clock received.

It is a specific function for the controller i-nstruments DJ-I but it is compatible with each midi controller that uses channels and cc mentioned above

25.2 Activation Controller

To activate or deactivate the Controller's function exclusive of all the potentiometers, encoders and switch of the SX-I, it is necessary to keep pressed for more than 3 seconds the encoder placed on the right of the display. When the activation is done, on the display, near the midi channel, it will appear a "!" (exclamation point). Standard mappings for Traktor's use are configurable following the direction explained in the point 2.0 Installation.

26.0 BATTERY (Tabletop Version Only).

When the level of the battery is not sufficient, it will start to blink the battery's symbol with the item "Low" on the display. The SX-I autonomy is approximately of 20 hours of functioning; the recharge should be done through a USB connection (from a computer or from a charger) and it needs 8 hours to be completed. In the case of inactivity longer than 45 minutes, the SX-I will automatically go in standby. To go back to the utilization, it is necessary to turn off the battery button and to disconnect the USB cable.

ATTENTION: To recharge the SX-I when connected to the power supply, the battery button should be set up on "I".

27.0 GENERAL DIAGRAM

