

USER MANUAL



English

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The product is ESD sensitive and is sold without casing.

Changes or modifications not expressly approved by the party responsible for compliance could void user's authority to operate equipment.

The LCD screens as illustrated in this user manual are for instructional purposes, and may appear somewhat different from the screens which appear on your device.

Location

Using the unit in the following locations can result in a malfunction:

- Direct sunlight
- Extreme temperature or humidity
- Excessive dust or dirty locations
- Excessive vibrations
- Close to magnetic fields

Interference with other electrical devices

Radios and televisions placed nearby may experience reception interference. Operate this unit at a suitable distance from radios and televisions.

Unplug all instruments when making connections

To avoid causing damage to the EXP-1 and other devices to which is connected, such as a hifi system or midi instruments, turn off the power and unplug all related devices before connecting or disconnecting audio and midi cables.

Headphones caution

To prevent hearing loss, avoid using headphones at high volumes for long periods of time.

Handling

To avoid breakage, do not apply excessive force to the switches or controls.



Notice regarding disposal (EU only)

If this symbol is shown on the product, manual, battery or package, you must dispose of it in the correct manner to avoid harm to human health or damage the environment.



Contact your local administrative body for details on the correct disposal method. If the battery contains heavy metals in excess of the regulated amount, a chemical symbol is displayed below the symbol on the battery package.

Warranty

The product is warranted to be free from defects in material or workmanship for a period of 12 months from the date of the shipment to you, the customer. In the event of a defect covered by this limited warranty, Fingersonic will, at its option and free of charge to customer, repair, replace or refund the purchase price paid.

This limited warranty does not cover the following:

- Alleged defect arises because customer has altered or repaired the product without written consent or authorization of Fingersonic
- The customer did not follow any applicable instructions for proper storage, usage or maintenance of this product.
- The customer has failed to notify Fingersonic of any defect where the defects should have been reasonably apparent on inspection: or
- The customer failed to notify Fingersonic of the defect within 12 months of the shipment to customer.
- This limited warranty does not cover the shipping cost of the defective product to Fingersonic neither it covers the cost of shipping the repaired or the replacement product to you.

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Summary

Copyright and legal notices.....	2
Introduction:.....	5
Device overview	7
Basic operation.....	12
Drums section	14
Bassline instrument	17
Piano instrument	18
Synth instrument	19
EXternal Sequencer.....	21
Mixer section usage	22
Effects	23
USB connectivity usage	24
Xpansion 1 Port.....	25
Xpansion 2 port.....	28
Context and instruments patches saving/recovering.....	29
Quick troubleshooting.....	33
Midi implementation chart.....	35
EXP-1 System Exclusive open source protocol.....	37
Technical specifications	38

Introduction:

Firstly, we thank you for choosing and purchasing this EXPerimental unit 1, an innovative product from FingerSonic. An amazing portable musical instrument containing a very powerful drums section (10 instruments), a vintage bassline synth, an electronic music oriented piano and a powerful virtual analog synthesizer engine. All this is controlled by a user friendly 16-step sequencer with an extra external track allowing to control another instrument with the simple FaderOs interface. A digital mixer is present to set every instrument level and a special mute function is featured for easy and quick live remix stage usage.

Although the EXP-1 is designed to be very intuitive to use, reading this manual will give you better understanding of all the features offered by your new instrument.

The unit has been designed to allow easy and quick music creation. You will be able to program great patterns and build a complete track without the need of a computer or other instruments. This is a completely standalone unit.

It is possible to run it on batteries and also an internal speaker is available for total autonomy. But it is obviously possible to hook it to an amplifier or a pair of headphones. The presence of USB and MIDI (Xpansion1 in optional) allows the instrument to be interfaced with the widest range of instruments and devices.

A led matrix allows to quickly select the voice/instrument to play or edit. Two rotary controls are provided to tune the synths and drums sounds.

A 16 keys keyboard allows to program the patterns or even play live with various modes available (Sequencer, Live or Arpeggios).

When edited, it is possible to save the complete pattern context on 16 available pattern memories.

A song mode is also available to assemble your patterns and make a complete song.

For additional information, up to date support and contact our technical team please feel free to visit the FingerSonic website at:

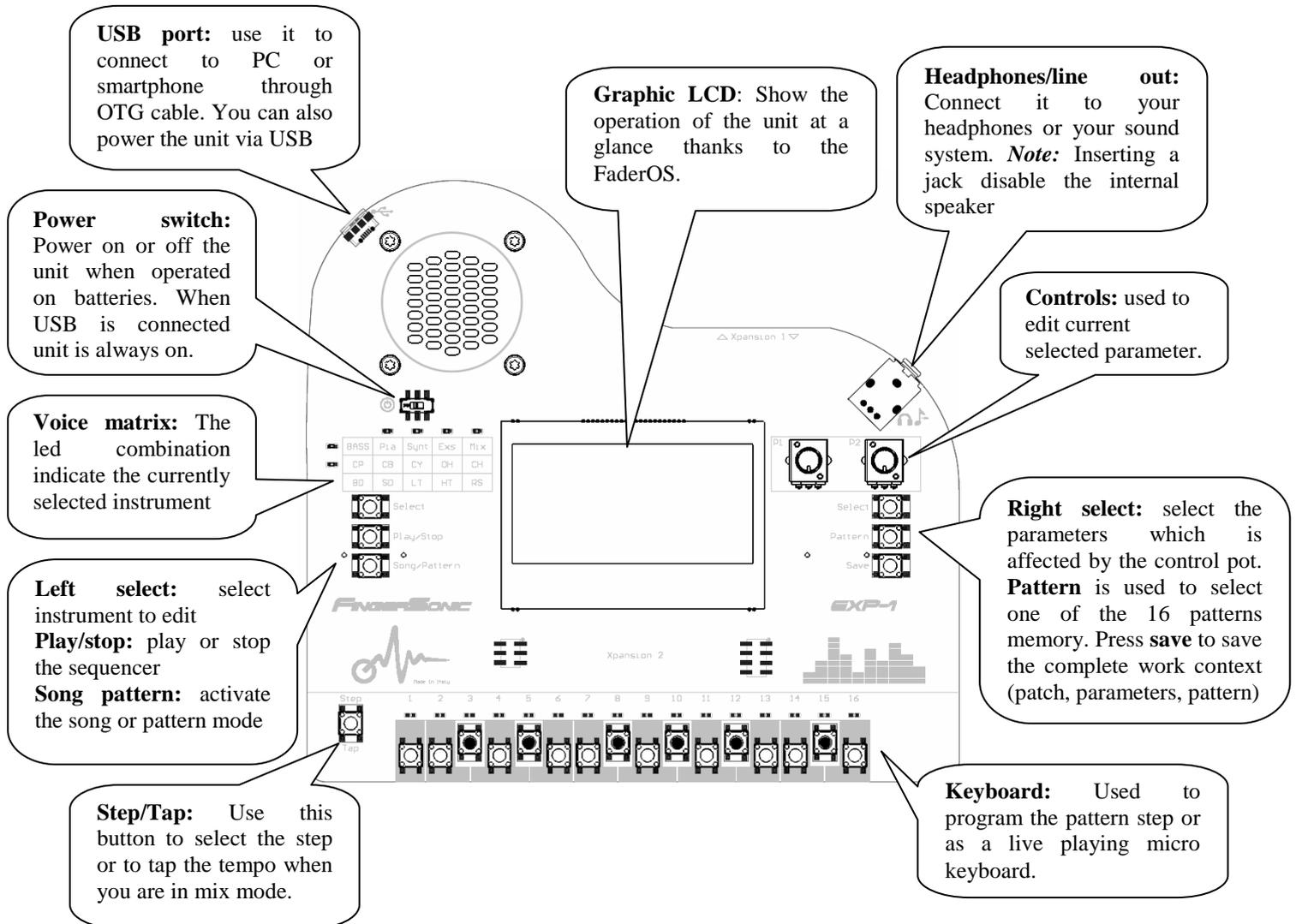
www.fingersonic.com

Key features:

- Rhythm part is made of 10 drum parts
- Drum parts synthesis as some editable parameters
- Vintage bassline synthesizer
- Electronic and dance music Piano mono voice
- 3 voices polyphonic analogue modelling synthesizer
- 15 voices total polyphony
- Effect section with a powerful reverb unit
- 16 synth patches
- 16 patterns memories
- External sequencer to easily control additional synth or sampler
- Tempo range from 20 to 200 BPM, with tap mode available.
- Song mode to chain patterns together
- Led matrix to select voice to work into
- 128 * 64 Graphic LCD with FingerSonic “mixer style UI” FaderOS
- Built in mixer with mute function
- Effect section with reverb and possibility of rhythm part exclusion
- USB port for MIDI data and SYSEX allowing to save/dump your work
- Internal speaker
- 3.5mm Stereo line/headphone output
- Sequencer support both rhythm mode for drum parts and note list mode for synths.
- Runs off external AC through USB power (not supplied) or 6 x AA batteries (not supplied)
- Standard MIDI jacks 3.5 mm in and out port (Optional Xpansion1/Gold version)
- 3 x Additional controllers for master volume and tone control (optional/Gold version)
- USB connection supports android OS devices as MIDI
- Full work context saving with one button press (patches, parameters and patterns)
- Open source SYSEX protocol
- Midi CC available for real time synth control
- CV/Gate output to control vintage synth or analog modular gear (optional/Gold version)

Device overview

EXP-1 is a complete music workstation, the figures hereafter will help you taking confidence with all the controls and various parts of it:



Note1: some buttons when pressed together activate some special functions

Right select + pattern = synthesizer second/first menu, can be activated when synth instrument is selected. EXS second/first menu, can be activated when EXS instrument is selected.

Right select + save = activate SYSEX Dump. When activated the unit will start to dump the current pattern context data (patch, parameters and pattern note). You need to have USB midi connected with a proper listening software to receive the data. SYSEX dump only work via USB midi not via classic midi port.

Right select + Left select = Restore the factory patch and parameter for the selected pattern.

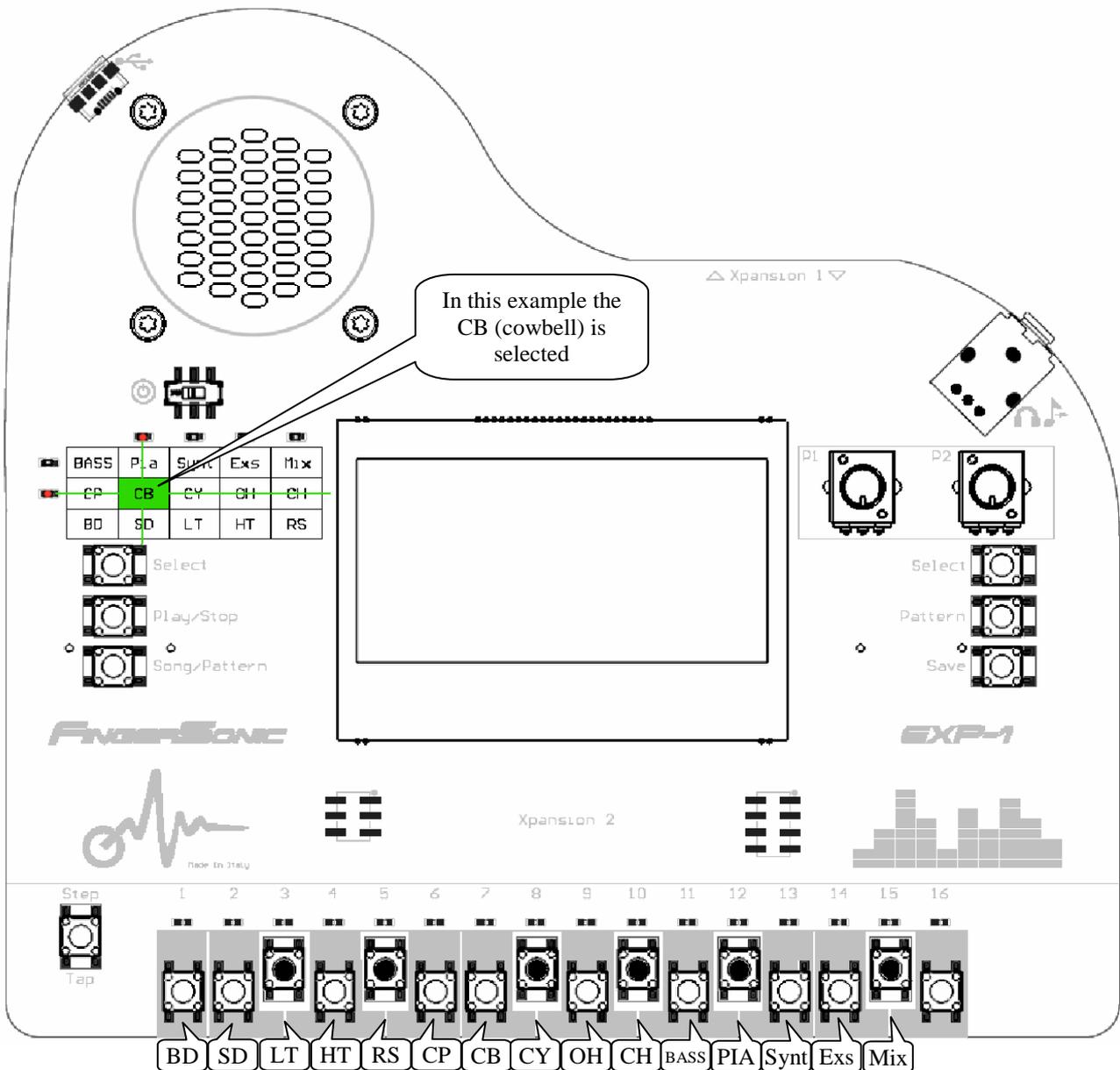
Right select + Play/stop = Restore the factory patch/parameters and clears the pattern notes and events.

Note2: When you press Save, EXP-1 will be busy for approximately 1 seconds saving the pattern context. The controls will not respond during this lapse time.

Instrument selection with instrument Matrix.

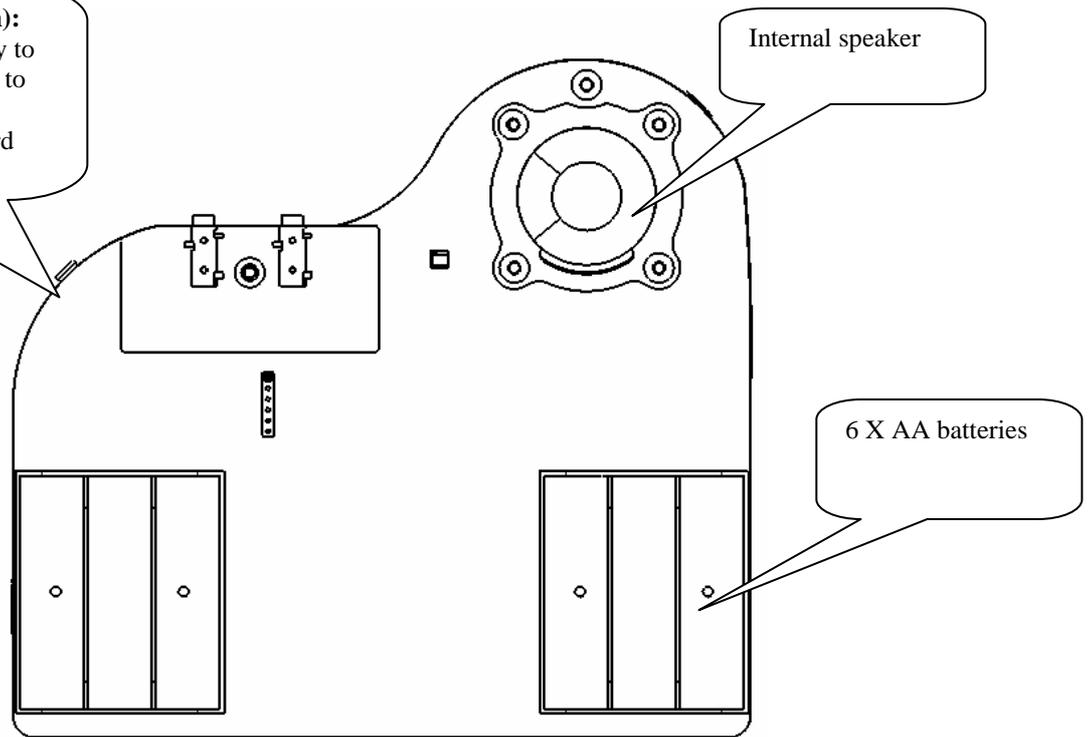
Your EXP-1 has a led matrix to show you at a glance which instrument is currently selected.

The intersection of Row led and Column led shows you the selected instrument. Note that the 1st row and column do not have a led, so if all led are off the BD is selected.

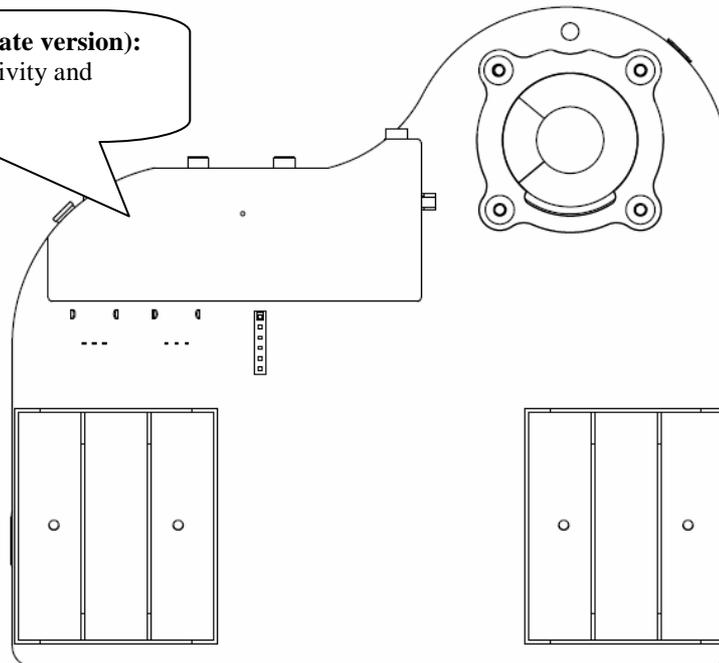


To select an instrument, simply press left select. Then the step button from 1 to 15 (as shown on the above figure) will blink and press one of them to select the instrument. The order is the same as in the Matrix as shown before.

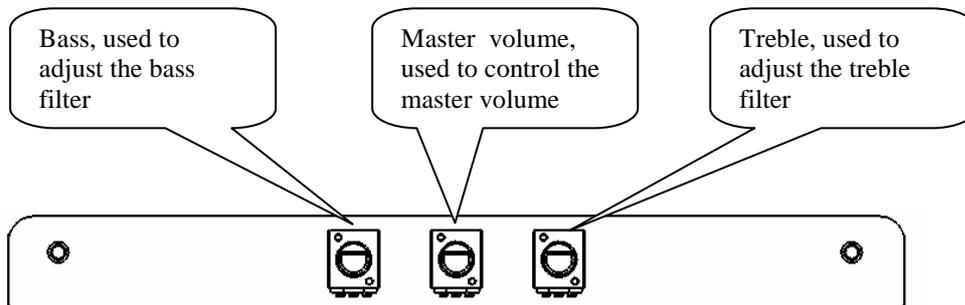
Xpansion 1 (MIDI only version):
gives standard MIDI connectivity to the device. By using 3.5mm jack to DIN cable, you can connect a synthesizer, expander or keyboard controller.



Xpansion 1 (MIDI & CV/Gate version):
gives standard MIDI connectivity and CV/Gate to the device.

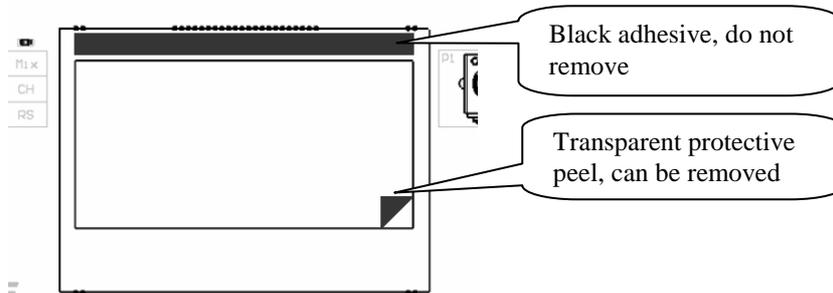


Xpansion 2 module:



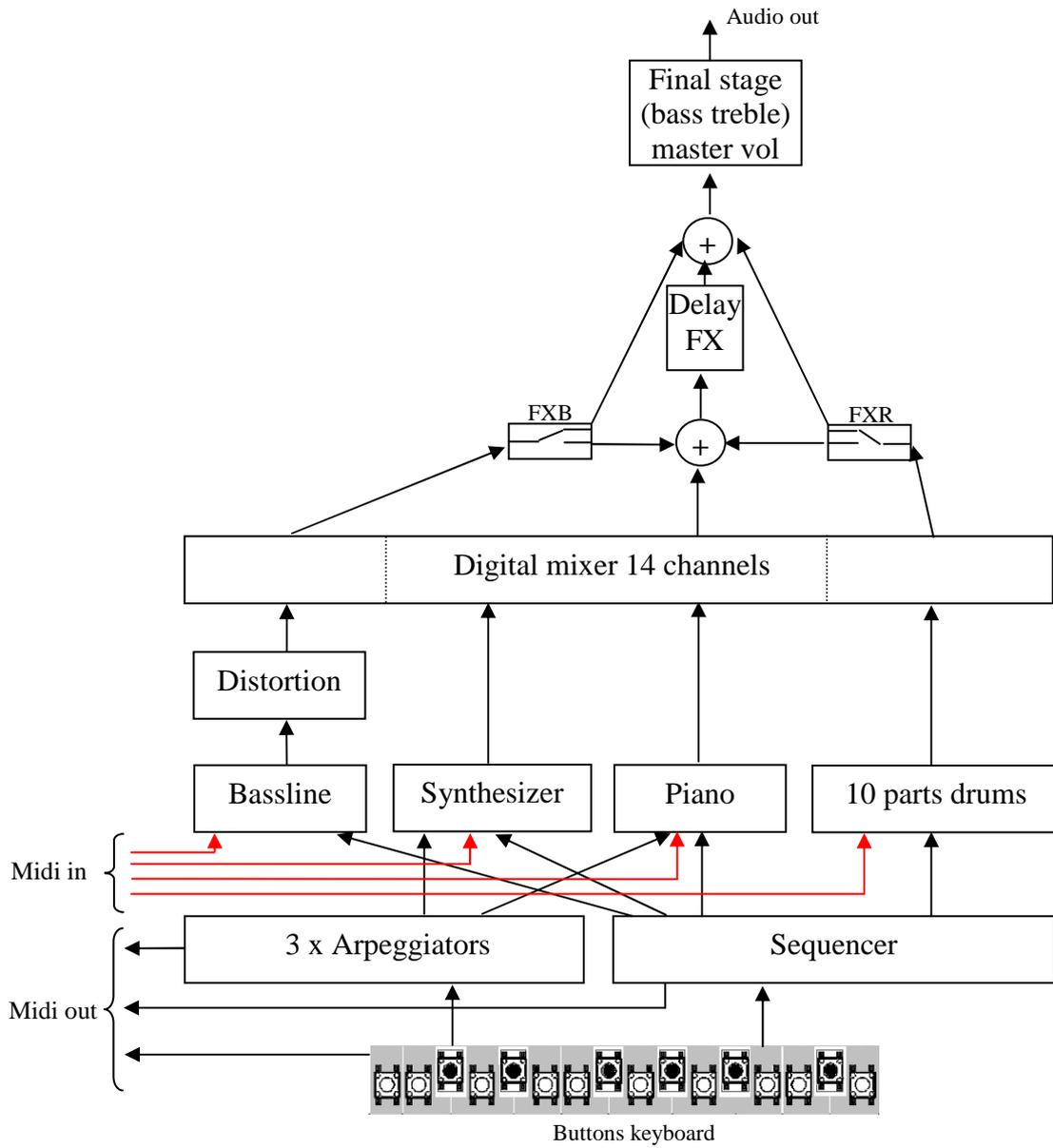
Important! Protective peel on screen:

You can remove the transparent protective peel on the LCD screen, but it is very important that you do not remove the black protective adhesive present on top of the screen. Doing so will void the warranty.



EXP-1 Unit block diagram:

The following charts shows the structure of the EXP-1 unit:



Basic operation

- Powering the unit

The unit can be powered from batteries or through USB. Through USB plug you can power it with an AC adapter, a computer port, a power bank, etc...

Note about using batteries: the device can be operated from six AA-size R6 alkaline or high capacity lithium batteries. Insert the batteries in two sets of three. 1.5V non rechargeable and 1.2V NIMH rechargeable batteries in AA size can be used.

Never mix battery types. All six batteries must be of the same type.

Battery life is dependent on type used. Up to 10 hours should be obtainable.

EXP-1 does not charge the batteries. You must charge them externally

Do not mix cells that have different type of charge

Remove the batteries if not used for a long period of time.

Spent batteries contain hazardous substances and should be disposed in a responsible manner.

Always dispose of used batteries in accordance with local environment and/or recycling guidelines.

When powered from USB the unit is always on. If the batteries are used it is possible to switch on and off the unit by using the power switch situated under the internal speaker.

- Getting started

Once switched on, the unit is ready to play. First select the pattern you want to hear and press play to start it.

You can select the instrument to edit by pressing the left select button. The matrix led indicates you the selected one. When selecting the instrument, note how the graphic LCD content change. It is in fact showing you the parameters of the current instrument you can edit (instrument page). To select the parameters to edit on the instrument page, you can use the right select button. The parameters are selected by couples. The selected couple can then be modified with the two modifiers potentiometers. The corresponding fader on the display indicate the parameter current level.

Note that it is possible also to play the voices of the EXP-1 through MIDI (USB or optional Xpansion1 module). To use the arpeggio feature, you need to start the sequencer to give the tempo.

To program the pattern, there are two different modes corresponding to rhythm voices (drums) or synthesizer voices.

Rhythm voices: The 16 step leds indicate if the selected drum voice will play the step. To make the voice play the step or not, simply press the corresponding step button. The Step button is not used in this case.

Synthesizer voices. The 16 step leds indicate which note will play for the corresponding step. The corresponding step is indicated on the LCD and can be selected with the step button. To make the note play, you will also have to program the note on and the note octave (Up Normal or Down). Once you are used to this logic, it is very easy to program melodies.

Once you like your work and the pattern is done you can save your work by pressing the save button. You will recall all the pattern note and events and also the synths patches when you recall this pattern.

Once you have created some patterns you can decide to create a song. So you will use the song mode by pressing the song button. The current mode is indicated on the display on the bottom right (P for pattern or S for song). To assemble your pattern you just have to select the song step with the step button and pressing the corresponding pattern number on the keyboard (from 1 to 16). You can assemble like that up to 16 patterns that will automatically play in chain.

- Screen fields

The screen view is divided in various field for easy and quick reading:

The image shows a digital display screen with the following fields and callouts:

- Faders:** A row of 16 vertical bars at the top, each with a small square at the bottom. Callout: "Faders, They indicate the level of the corresponding parameter (which name is reported under)".
- Parameter Names:** Three lines of text below the faders: "GTRFDDT", "AUEXLLE", and "INURFTM". Callout: "The name of the parameters are written from top to down".
- Tempo:** The number "120" is displayed on the left side. Callout: "Tempo shown in BPM".
- Step:** The number "1" is displayed in the center. Callout: "Step currently edited (applicable only to synthesizers)".
- Navigation:** A right-pointing arrow ">" is displayed. Callout: "On the left of the arrow is shown the pattern currently played and on the right is shown the next pattern".
- Mode Indicators:** "OK" and "P" are displayed on the right side. Callout: "P: Pattern mode, S: Song mode".
- Battery/USB:** Callout: "Battery level/USB indicator. OK: battery are good, LO: Replace battery, US: USB is plugged".

Drums section

The drum section is composed of 10 tracks. Each with a different voice:

- BD Bass drum
- SD Snare drum
- LT Low tom
- HT High tom
- RS Rim shot
- CP Hand clap
- CB Cow bell
- CY Cymbal
- OH Open hi hat
- CH Closed hi hat

Each voice allows to edit some synthesis parameters according to its type (example: Snappy for Snare, Tuning for Bass drum. etc...). There is also a parameter to allow the routing of the drums through the FX section or not.

Note that parameters are written from top to down on the device screen.

BD screen

GAI: Gain level of the BASS drum

TUN: Tuning of the BASS drum

REV: it is possible to reverse the BASS drum sound with this control

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

SD screen

GAI: Gain level of the SNARE drum

SNA: Snappy level of the SNARE drum

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

AON: Accent feature. You can set an accent (slightly raise the volume) for the corresponding step.

Use the Step button to select the step in which you want to insert the accent.

LT screen

GAI: Gain level of the LOW TOM

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

HT screen

GAI: Gain level of the HIGH TOM

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

RS screen

GAI: Gain level of the RIMSHOT

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

CP screen

GAI: Gain level of the CLAP

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

CB screen

GAI: Gain level of the COWBELL

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

CY screen

GAI: Gain level of the CYMBAL

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

OH screen

GAI: Gain level of the OPEN HIHAT

TUN: Tuning of the OPEN HIHAT

REV: it is possible to reverse the HIHAT sound with this control

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

CH screen

GAI: Gain level of the CLOSED HIHAT drum

TUN: Tuning of the CLOSED HIHAT drum

FXR: FX route, it is possible to exclude the drum voices of the reverb effect by activating this control.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

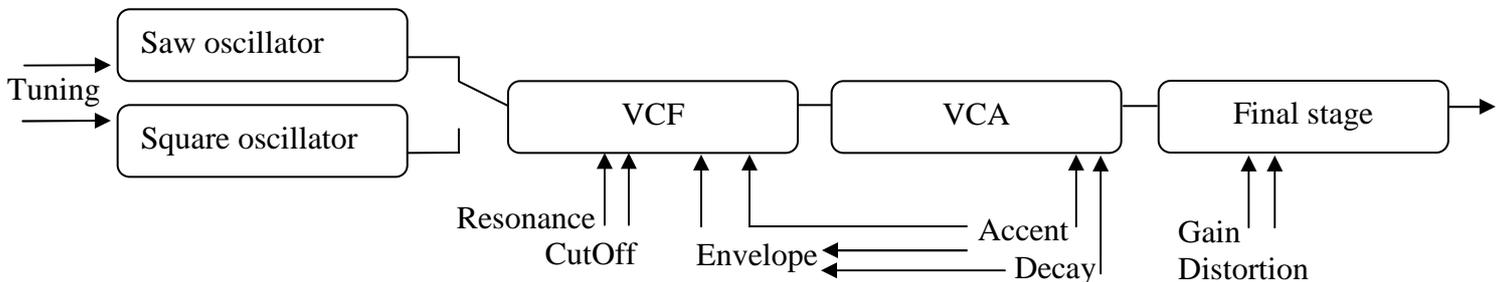
TEM: Tempo, use this fader to adjust the tempo.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

AON: Accent feature. You can set an accent (slightly raise the volume) for the corresponding step.
Use the Step button to select the step in which you want to insert the accent.

Bassline instrument

The following charts describes the bassline synth structure:



The Bassline output is then routed to the FX reverb unit and to the final mixer stage.

It is also possible to play the Bassline live from the internal keyboard. Through midi or USB, it is possible to play it by using MIDI canal 2.

The parameters you can edit from the Bassline are reported as follow:

Note that parameters are written from top to down on the device screen.

BASSLINE screen

CUT: Filter cutoff level.

RES: Filter resonance.

ENV: Envelope modulation control.

DEC: Controls the decay (time note takes to fade).

ACC: Accent of the BASS pattern.

TUN: Tuning of the oscillator.

ON: Switch on or off the note for the active step.

UND: select the octave of the note for the active step (Up, Normal or Down).

AON: Accent on, activate the accent for the active step.

SLI: activate the slide for the active step.

DIS: Distortion effect. By increasing this effect it is possible to obtain very strong acid sound.

GAI: Gain level of the Bassline.

WAV: choose the waveform of the oscillator, set it on top for a sawtooth waveform and on bottom for a square waveform.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

LS: Play mode

L: Live, you can play from internal or external keyboard. The sequencer is not active.

S: Sequencer, the bassline is played from the sequencer.

FXB: FX route for Bassline. If activated, it is possible to exclude the Bassline voice from the delay effect.

TEM: Tempo, use this fader to adjust the tempo.

Piano instrument

The Piano voice was specially designed by Fingersonic for electronic music. The piano has a single voice (mono) to allow the programming of melodies with the sequencer. It is possible to edit the envelope with two parameters: the attack and the release. By modifying the attack it is possible to make the instrument percussive (such as piano) or not (to reproduce some kind of violins for example). The Release instead will be used to simulate a longer sound as for example when the pedal is pressed on a real acoustic grand piano.

It is possible to play the bassline live from the internal keyboard. Through midi or USB, it is possible to play it by using **MIDI canal 3**.

The Piano features an arpeggiator that can be triggered from the internal keyboard or through USB or midi (canal 3). Remember that the arpeggiator gets the tempo from the sequencer so, you have to press play to start the arpeggiator and select the appropriate tempo.

The parameters you can edit for the Piano are reported as follow:

Note that parameters are written from top to down on the device screen.

Piano screen

ON: Switch on or off the note for the active step

UND: Select the octave of the note for the active step:

0: B1 to D3, 1: B2 to D4, 2: B3 to D5, 3: B4 to D6.

ARP: Arpeggiator pattern

LAS: Play mode

L: Live, you can play from internal or external keyboard. The sequencer is not active.

A: Arpeggiator, you can play from internal or external keyboard, the sequencer is not active.

S: Sequencer, the piano is played from the sequencer.

OCT: Select the octave of the internal micro keyboard when playing live or arpeggiator. Range is the same as UND described above.

AAM: Attack amplifier, this is the attack envelope of the piano. You can tune it to make the piano more or less percussive.

RAM: Release amplifier, this is the release envelope of the piano. You can tune it to make sound last longer after releasing the note (like if you press the pedal on an acoustic piano).

VOL: Piano voice volume

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

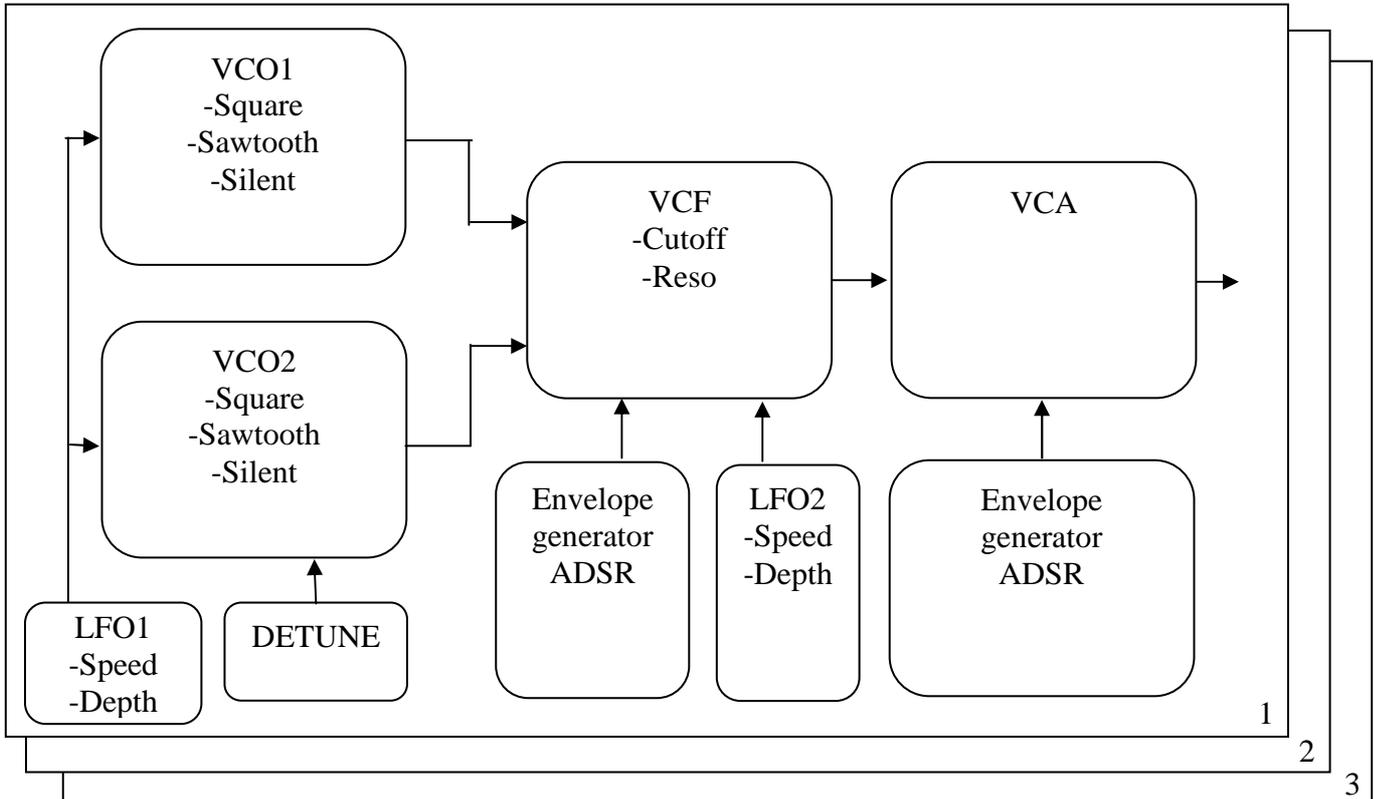
TEM: Tempo, use this fader to adjust the tempo.

LOC: Arpeggiator lock function. If activated, the arpeggiator keeps playing even if keys are depressed.

Synth instrument

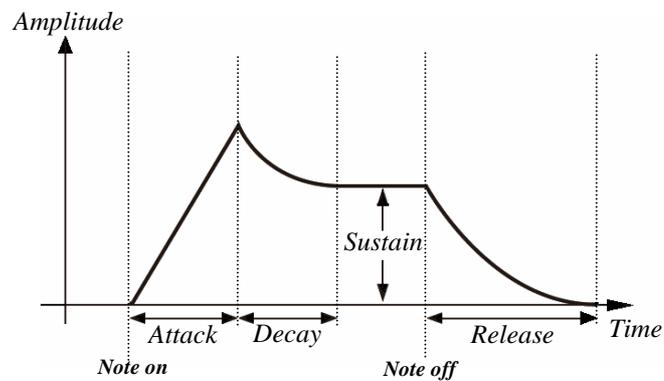
Your EXP-1 instrument contains a complete 3 voices (2 oscillators per voice for a total of 6 oscillators) analog modelling synthesizer.

Diagram of a synth voice (3 are present)



Envelope generator diagram:

The envelope generator has 4 parameters that can be adjusted to modify the sound dynamics. It works by changing the amplitude level over time.



It is possible to play the synthesizer live from the internal keyboard. Through midi or USB it is possible to play it by using **MIDI canal 1**.

The synthesizer features an arpeggiator that can be triggered from the internal keyboard or through USB or midi (canal 1).

The parameters you can edit for the synthesizer are reported as follow:
Note that parameters are written from top to down on the device screen.

Synthesizer screen

The synthesizer screen has 2 pages. It is possible to change page by pressing on Right select + pattern buttons

Page 1

CUT: Filter cutoff level

RES: Filter resonance

WA1: Waveform of oscillator 1 from bottom to top: Sawtooth. Square, Off.

WA2: Waveform of oscillator 1 from bottom to top: Sawtooth. Square, Off.

AAM: Attack amplifier

DAM: Decay amplifier

SAM: Sustain amplifier

RAM: Release amplifier

AFI: Attack filter

DFI: Decay filter

SFI: Sustain filter

RFI: Release filter

PLS: Pitch Lfo Speed

PLD: Pitch Lfo Depth

FLS: Filter Lfo Speed

FLD: Filter Lfo Depth

OSD: Oscillator 2 Detune

Page 2

ARP: Arpeggiator pattern

LAS: Play mode

L: Live, you can play from internal or external keyboard. The sequencer is not active

A: Arpeggiator, you can play from internal or external keyboard, the sequencer is not active

S: Sequencer, the piano is played from the sequencer

ON: Switch on or off the note for the active step

UND: Select the octave of the note for the active step:

0: B0 to D2, 1: B1 to D3, 2: B2 to D4, 3: B3 to D5, 4: B4 to D6.

SLI: activate the slide for the active step.

OCT: Select the octave of the keyboard when playing live or arpeggiator. Range is the same as UND described above.

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay

TEM: Tempo, use this fader to adjust the tempo.

LKP: Lock patches. If set, the synths patches will not be loaded when the pattern is changed.

LOC: Arpeggiator lock function. If activated, the arpeggiator keeps playing even if keys are depressed.

SWG: Swing function (2 levels). Slightly delays the start of every second steps.

EXternal Sequencer

The external sequencer allows you to control an external synth, sound module or sampler easily and with the same friendly FaderOS interface as the other voices of your EXP-1.

This external sequencer works by sending the midi events to the external module. This can be done through the USB port or through the physical MIDI if the Xpansion 1 module is present.

Live mode

It is possible to use the internal keyboard to send midi message through USB or MIDI port. A passthrough mode is also present if you use the midi IN Canal 5 (Both USB or MIDI port) all the midi note on/note off events will be forwarded to Midi OUT Canal 1 (both USB or midi)

All the midi messages from the EXS or the internal keyboard are outputted on canal 1.

You also have a dedicated arpeggiator that can be activated to control the external synth through midi (both USB and Physical). You can use the internal keyboard or an external keyboard to control the arpeggiator (You must send the midi events on Canal 5 to the input of the EXS-1 and the data will be outputted on Canal 1 as it is for all EXS midi events).

Note that parameters are written from top to down on the device screen.

EXS screen

ON: Switch on or off the note for the active step.

UND: Select the octave of the note for the active step:

0: B0 to D2, 1: B1 to D3, 2: B2 to D4, 3: B3 to D5, 4: B4 to D6.

ARP: Arpeggiator pattern

LAS: Play mode

L: Live, you can play from internal or external keyboard. The sequencer is not active

A: Arpeggiator, you can play from internal or external keyboard, the sequencer is not active.

S: Sequencer, the external synth is played from the sequencer.

OCT: Select the octave of the keyboard when playing live or arpeggiator. Range is the same as UND described above.

VOL: EXS volume level, it is sent through midi to the external sound module. (Note: will work only if the external synthesizer support volume change).

TEM: Tempo, use this fader to adjust the tempo.

LOC: Arpeggiator lock function. If activated, the arpeggiator keeps playing even if keys are depressed.

CLK: Midi Clock function activation. When the fader is set (high) The EXS sequencer track is deactivated and EXP1 sends Midi Time Code information to synchronize an external sequencer. The start and stop code are set when you press play/stop and the clock code is sent so the slave sequencer connected takes the tempo from the EXP-1 sequencer clock.

PCH: External instrument Program Change. Use this control to send a program change command to an external instrument (either on USB or MIDI port). The program change is sent on MIDI channel 1. Note that the EXP-1 only sent program change from 0 to 63.

CC1-4: Send a control change MIDI command (either on USB or MIDI port). You can define the CC number by activating the 2nd menu by pressing right select and pattern buttons together. When in the 2nd menu you can define the CC number from 1 to 127.

Mixer section usage

Your EXP-1 is equipped with a special digital mixer console. You can access it by selecting MIX on the instrument matrix. This Mixer allows you to individually control the voices volume (note that for External sequencer, the volume is sent as MIDI message to external module). It is also possible to control the master volume. (if you have the Xpansion2 module you can also control it from the central potentiometer).

More than that, the mixer allows you to control the reverb FX and also the tempo.

The very nice feature is the mute mode which allows you to use the 16 keys keyboard to mute the voice individually (only 14 keys are used as the number of voices available. Which is very useful for live performance for example.

The step button on the bottom left can be used for Tap tempo function when you are in mixer mode. Just press it 3 time in time with the tempo you want to synchronize to and the EXP-1 will calculate and instantly apply the tempo you tapped.

Note that parameters are written from top to down on the device screen.

MIXER screen

BD: Bass Drum gain level

SD: Snare drum gain level

LT: Low tom gain level

HT: High tom gain level

RS: RimShot gain level

CP: Hand clap gain level

CB: Cowbell gain level

CY: Cymbal gain level

OH: Open hihat tom gain level

CH: Closed hihat level

BAS: Bassline gain level

PIA: Piano gain level

SYN: Synthesizer gain level

EXS: External synthesizer gain level (send through midi output)

DLF: Delay feedback, adjust the feedback amount going in the delay line.

DLT: Delay time, adjust the time delay.

MAS: Master volume. If you already purchase the Xpansion 2 module, you can also tune this parameter from the central potentiometer.

TEM: Tempo, use this fader to adjust the tempo.

Effects

An effect section providing a reverb is available.

The Reverb delay and feedback can be adjusted across a wide range so you can obtain very interesting and powerful results.

It is also possible to disconnect the drum section from the effect section thanks to the FXR feature.

The bassline also offers a special distortion effect allowing you to produce very acid and saturated sounds.

USB connectivity usage

Your EXP-1 is equipped with USB connectivity. You can connect it to a PC for example to control the device with a MIDI sequencer. Or you can also connect it to an android Tablet or a smartphone to use it in combination with all the fine musical apps available.

Note: an OTG adapter is required to connect the device to smartphones.

Application examples:

Use with smartphone or tablet MIDI apps

You will find online hundreds of useful apps that will control your EXP-1 through the USB midi OTG port (you will need USB OTG adapter).

For example you will find great apps that will allow you to divide the screen of your smartphone in coloured pads. Then you can use this pads to trigger sounds or note on your EXP-1 to play live.

Use with PC MIDI sequencer

By using a MIDI sequencer you can play MIDI files through the EXP-1 using its fantastic voices that you can then tune in realtime.

Xpansion1 Port

Your instrument is evolvable and allows you to install a XP1 module onto the Xpansion 1 port. 2 Types of Xpansion1 modules are currently available (the module you have depends on the version you purchased).

- The first one gives MIDI in & out connectivity while
- The second one gives CV/Gate connectivity + MIDI in & out

This XP1 module will give you the standard MIDI connectivity. You will be able to connect directly to sound modules or MIDI devices.

If you got the module with CV/Gate, you can control vintage synthesizer or analog modular gear.

Note: If you purchase the Gold edition, your product comes with this module already installed in factory.

USB to MIDI conversion

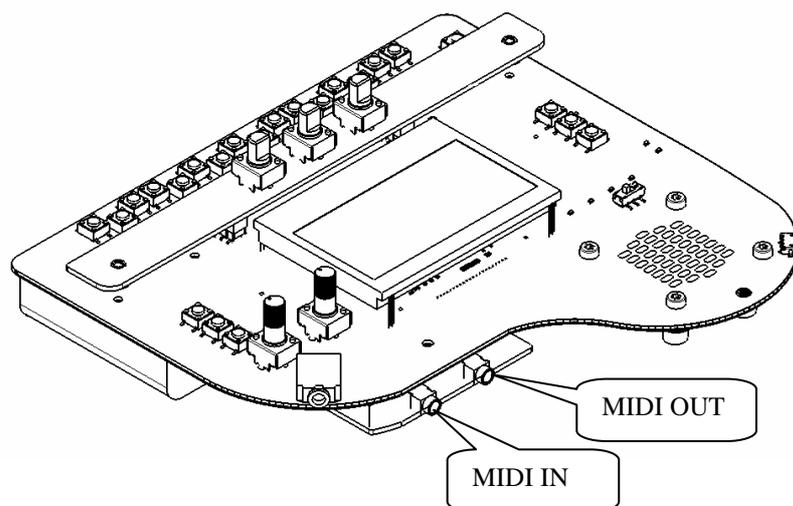
With this module, the EXP-1 can act as a USB <-> MIDI converter. You can use it for example to connect a MIDI keyboard to a laptop which has only USB port.

The channel 4 is used for this conversion. All the MIDI traffic of the channel 4 entering on USB will be forwarded to XPANSION MIDI on channel 4 and the same on the other sense. Note that only Note ON, Note OFF will be forwarded.

USB to CV/Gate conversion

If you got the version with CV/Gate connectivity, the EXP1 can act as a USB <-> CV/Gate converter. The same MIDI channel 4 is used as in the USB to MIDI conversion (see above).

MIDI connexions (MIDI only Xpansion1)



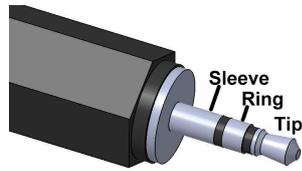
The mini in and out are two 3,5mm connectors. You can easily connect them to standard 5-pin DIN socket by using a break-out cable you can purchase separately.

Midi jack pinout

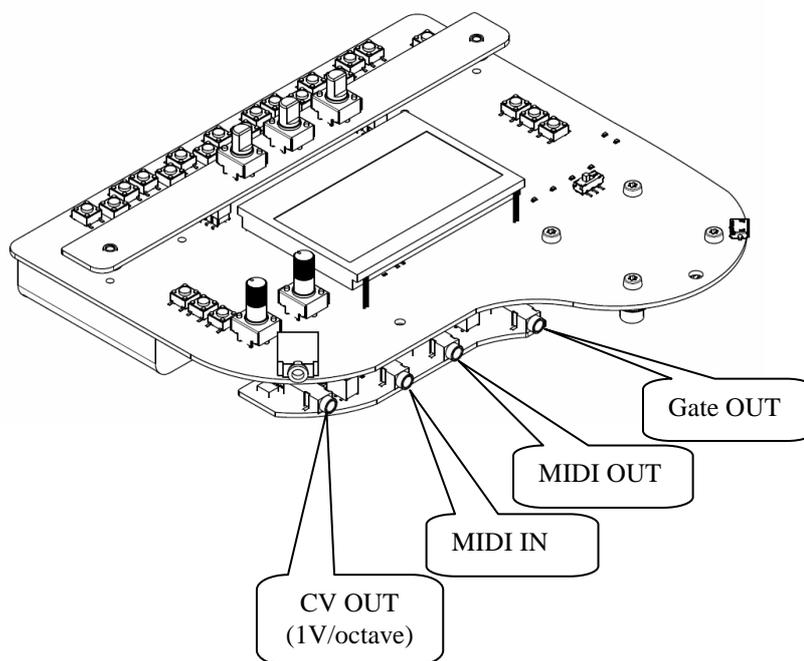
Tip: Current source (midi DIN pin 4)

Ring: Current sink (midi DIN pin 5)

Sleeve: Shield (midi DIN pin 2)



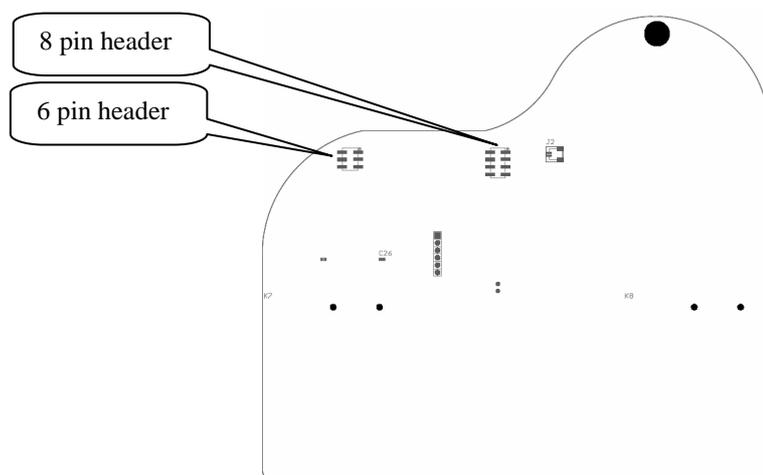
MIDI and CV/Gate connexions (MIDI and CV/Gate Xpansion1)



Xpansion 1 module installation

Please, before installing the module, unplug your EXP-1 from USB and remove the batteries.

On the kit you purchase, you will receive 2 SMD headers (1 x 6 pins and 1 x 8 pins), the Xpansion 1 module and an M3 screw with a spacer.



1° step: Solder the 2 headers on the back of your EXP-1 synth.

2° step: Insert the Xpansion1 module onto the headers you just soldered.

3° step: Install the M3 screw with the spacer (please apply moderate tightening).

4° step: Reinstall the batteries and power up your EXP-1.

Congratulations, you can now enjoy your upgraded EXP-1!

Xpansion 2 port

Your instrument is evolutive and allows you to install a XP2 module onto the Xpansion 2 port.

Note: If you purchase the Gold edition, your product comes with this module already installed.

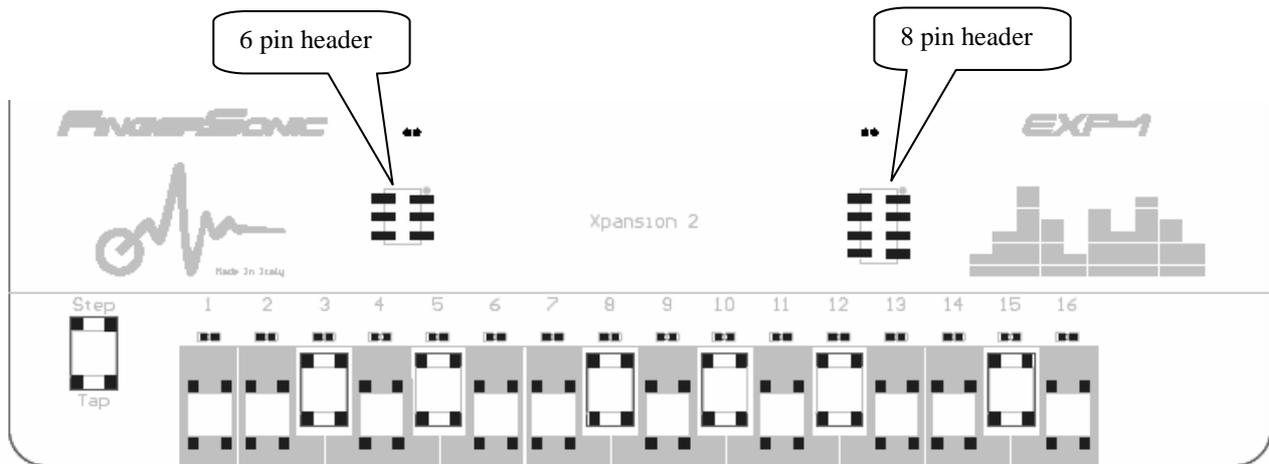
This XP2 module will give you 3 more controls allowing you to easily control the master volume and the tone of the instrument.

If you don't have this expansion you will still be able to tune the master volume on the mixer panel. Instead for Bass and Treble tones, if you don't have the module they will be set to a default value you cannot tune.

Xpansion2 module installation

Please, before installing the module, unplug your EXP-1 from USB and remove the batteries.

On the kit you purchase, you will receive 2 SMD headers (1 x 6 pins and 1 x 8 pins), the Xpansion2 module and 2 M3 screws with spacers.



- 1° step: Unscrew the 2 external screws holding in place the batteries holders.
- 2° step: Solder the 2 headers on the top of your EXP-1 synth.
- 3° step: insert the Xpansion2 module onto the headers you just soldered.
- 4° step: Install the M3 screws with the spacer from the back through the battery holders (please apply moderate tightening).
- 5° step: Reinstall the batteries and power up your EXP-1.

Congratulations, you can now enjoy your upgraded EXP-1!

Context and instruments patches saving/recovering

The device works with a pattern context philosophy.

A Pattern context is your complete work session. You have 16 pattern context memory slot available. Pattern Context concept is wider than the simple Pattern.

While a pattern only hold the notes you program, the context holds also the patches of the synth you tune (note that not all parameters are saved, please see further for a list). Some parameters are also saved such as Delay FX for example.

You have an additional memory slot available which is the song. The song memory slot allows you to save and recall a 16 pattern sequence chain that will play automatically.

Internal memory:

When you use the save button you pattern context or song context is saved on the physical memory of the device. When you then recall this pattern context slot, you will have again all the parameters and notes you saved back.

System Exclusive:

By using System exclusive commands through the USB midi interface (Standard MIDI interface if you have Xpansion2 cannot be used for SYSEX) it is possible to send to an external device (generally a PC will be used) the complete Pattern Context or Song context currently selected. You will be able for example to save the System exclusive commands sent from the device into a file. Then, by sending back this file to the EXP-1, it will reinstall the previously saved Context.

All you have to do to send SYSEX to an external device is press Right select + save buttons. To receive you have nothing to do. Just set the pattern you want to drop the SYSEX into and send it with the external device.

The context received by System exclusive commands will be put on the currently active pattern. If you press the save button after receiving the SYSEX then it will be saved on the physical memory slot.

You will also be able to use the files saved through SYSEX to share with friends for example or through internet thus publishing new patterns or new patches for EXP-1.

Note that the SYSEX protocol used on EXP-1 is open source, so you will also be able to edit it by hand to duplicate some parts or to isolate only the Bassline patch for example. The possibilities are infinite. You can also write a software or an app to edit the EXP-1 sysex for example.

PC computer:

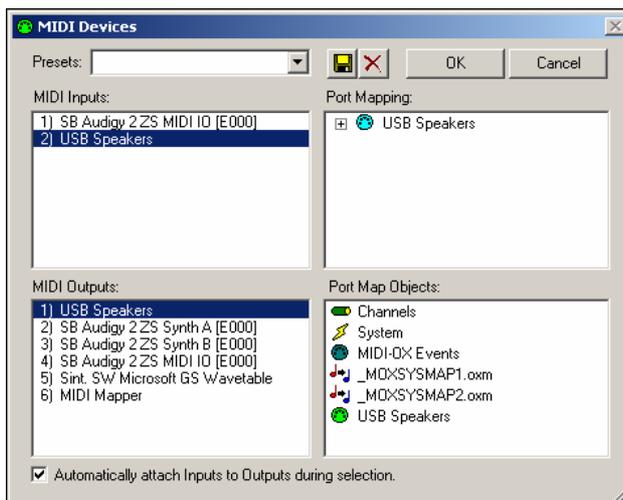
Example of using SYSEX with the very good MidiOX software.

Receiving SYSEX from EXP-1

1°) Connect your EXP-1 to PC USB.

2°) Launch MidiOX

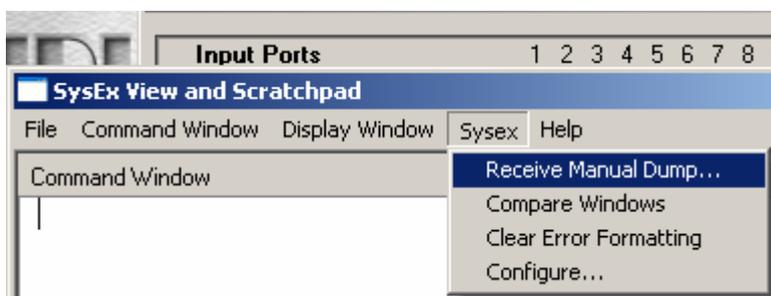
3°) Select USB speakers as midi input and USB speakers as midi output.



4°) Click on view -> SYSEX

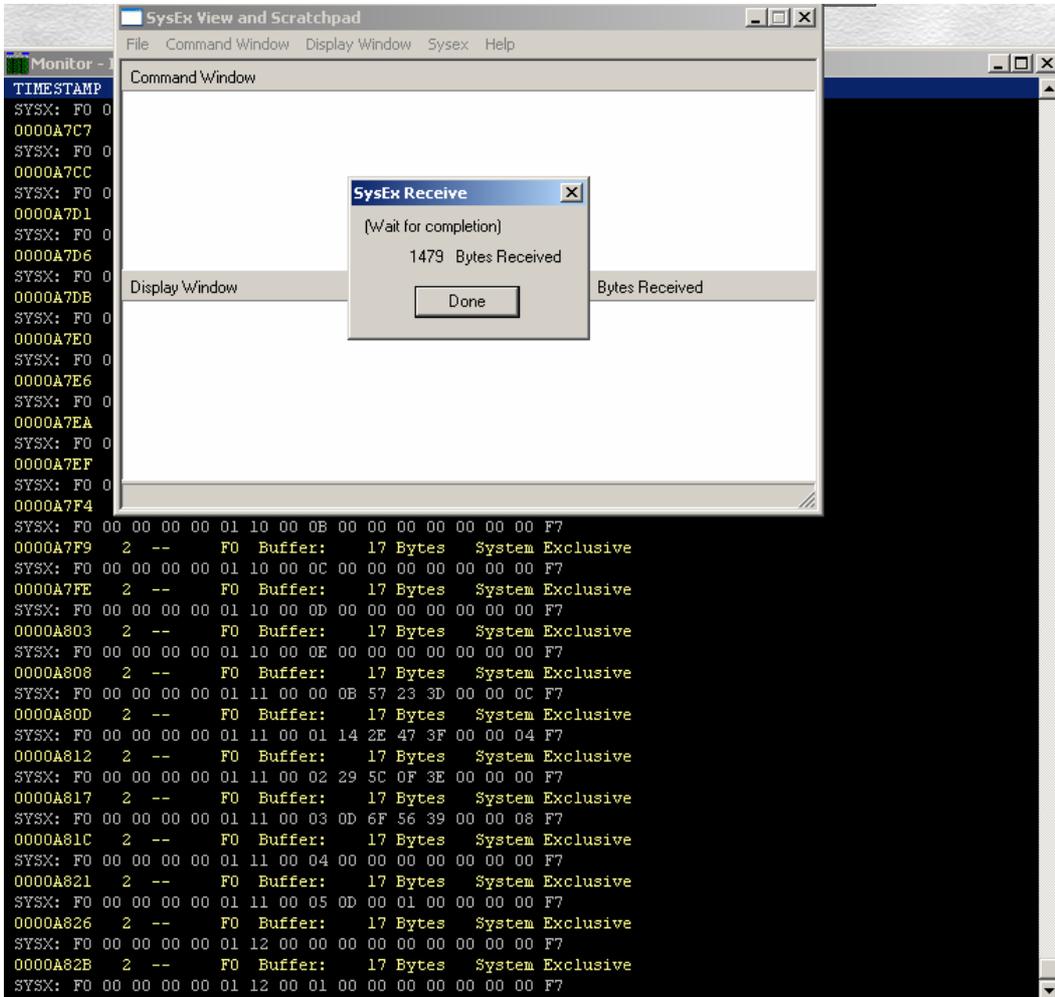


5°) Select receive manual dump

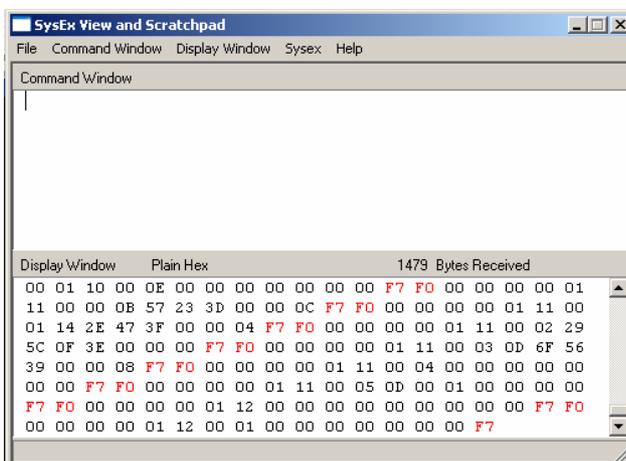


6°) Press Right select + Save

Watch your SYSEX bytes arriving on the PC. By using the monitor window and the information available on the last chapter you can even see the message content and study it to create your own messages to interact with the EXP-1.



7°) click on the Done button



7°) Save the file where you prefer. File will have the .syx format.

Sending SYSEX to EXP-1

Do the precedent steps until point 4°)

5°) Click on send Sysex file, then select the file you want to send back on EXP-1. File will have .syx extension.



6°) Wait for the transfer to finish. Don't forget to save the pattern context if you want to keep it as long as Sysex file is only downloaded in ram.

Quick troubleshooting

“I don’t hear any sound” troubleshooting:

From internal speaker: check that no jack is plugged into the audio out. Plugging a jack in the audio out disable the internal speaker.

From audio out: check that you correctly plugged the jack to the line in of your audio system and raise the volume to audible level.

Master level: check that the master level on the mixer panel of the EXP-1 is set to audible level.

Individual instrument level: check that the individual instrument gain is set to audible level in the mixer panel of your EXP-1.

Drum section (sequencer related): check that the sequencer is playing and not stopped. Check that on the corresponding instrument you want to hear you program at least an event on one of the 16t steps.

Bassline (sequencer related): check that the sequencer is playing and not stopped. Check that you program at least a note to play on one of the 16 step. Programming a note to play involves that you set a note to on with the corresponding fader and you also select a note to play on the keyboard by pressing the desired key.

Bassline (live mode): Check that the LS control is set to “live”. If using internal keyboard press at least a note and also you must select the bassline instrument. If using external keyboard press at least a note with the midi canal selected to 2.

Bassline (patch related): Check that the Cutoff control is not set at 0.

Piano (sequencer mode): check that the LAS control is set in to “sequencer”. Check that the sequencer is playing and not stopped. Check that you program at least a note to play on one of the 16 step. Programming a note to play involves that you set a note to on with the corresponding fader and you also select a note to play on the keyboard by pressing the desired key.

Piano (arpeggiator mode): Check that the LAS control is set to “arpeggiator”. Check that the sequencer is playing and not stopped as arpeggiator takes the tempo from sequencer. If using internal keyboard press at least a note and also you must select the piano instrument. If using external keyboard press at least a note with the midi canal selected to 3.

Piano (live mode): Check that the LAS control is set to “live”. If using internal keyboard press at least a note and also you must select the piano instrument. If using external keyboard press at least a note with the midi canal selected to 3.

Piano (patch related): Please check that the “AAM” parameter is not set to the maximum.

Synth (sequencer mode): check that the LAS control is set in to “sequencer”. Check that the sequencer is playing and not stopped. Check that you program at least a note to play on one of the 16 step. Programming a note to play involves that you set a note to on with the corresponding fader and you also select a note to play on the keyboard by pressing the desired key.

Synth (arpeggiator mode): Check that the LAS control is set to “arpeggiator”. Check that the sequencer is playing and not stopped as arpeggiator takes the tempo from sequencer. If using internal keyboard press at least a note and also you must select the synth instrument. If using external keyboard press at least a note with the midi canal selected to 1.

Synth (live mode): Check that the LAS control is set to “live”. If using internal keyboard press at least a note and also you must select the synth instrument. If using external keyboard press at least a note with the midi canal selected to 1.

Synth (patch related): To be able to produce a sound, the synth must have at least 1 oscillator enabled (WA1 and WA2) and the Amp envelope must be properly set (example sets A to 0, D to 0, S to maximum and R to 0). The cutoff parameter must not be at 0.

EXS (general troubles): To have EXS work, you must obviously connect an external synthesizer or sound module by using the MIDI out port of Xpansion2 or through USB midi out (which is not USB host so cannot be connected directly to other USB MIDI device). Then the external module must be configured to accept the midi message in input on midi port 1. Also mind to set EXS volume to audible level and not muted.

Note: External module must be properly set to produce sounds, please see the corresponding manufacturer manual for reference.

EXS (sequencer mode): check that the LAS control is set in to “sequencer”. Check that the sequencer is playing and not stopped. Check that you program at least a note to play on one of the 16 step. Programming a note to play involves that you set a note to on with the corresponding fader and you also select a note to play on the keyboard by pressing the desired key.

EXS (arpeggiator mode): Check that the LAS control is set to “arpeggiator”. Check that the sequencer is playing and not stopped as arpeggiator takes the tempo from sequencer. If using internal keyboard press at least a note and also you must select the EXS instrument. If using external keyboard press at least a note with the midi canal selected to 1.

EXS (live mode): Check that the LAS control is set to “live”. If using internal keyboard press at least a note and also you must select the EXS instrument. If using external keyboard press at least a note with the midi canal selected to 5 (which is midi passthrough canal for EXS).

Midi implementation chart

MIDI implementation table

EXP-1

FW01

X means not supported

Function	Received	Transmitted	Comment
Drum channel	10	X	
Synth channel	1	X	
Bassline channel	2	X	
Piano channel	3	X	
External Sequencer		1	Keyboard can also transmit
Note number	0-127	0-127	
Velocity	X	X	Recognized only for Note on/off
After touch	X	X	
Pitch bend	Channel 1 & 2	X	For bassline & synth
Control Change :			
Modwheel 1	Channel 1	X	Controls the pitch LFO depth
Cutoff 3	Channel 1 & 2	X	
Volume 7	Channel 1, 2 & 3	Channel 1	Volume of EXS transmitted
Reso 9	Channel 1 & 2	X	
Effects reverb depth 12	All channels	X	
Effects reverb time 13	All channels	X	
OSC1 type 46	Channel 1 & 2	X	
OSC2 type 47	Channel 1	X	
OSC2 Detune 48	Channel 1 & 2	X	For bassline, controls the tuning
Amp Attack 49	Channel 1 & 2	X	For bassline controls envelope
Amp Decay 50	Channel 1 & 2	X	For bassline controls decay
Amp Sustain 51	Channel 1 & 2	X	For bassline controls accent
Amp Release 52	Channel 1 & 2	X	For bassline controls distortion
Filter Attack 53	Channel 1	X	
Filter Decay 54	Channel 1	X	
Filter Sustain 55	Channel 1	X	
Filter Release 56	Channel 1	X	
Filter LFO speed 57	Channel 1	X	
Filter LFO depth 58	Channel 1	X	
Pitch LFO speed 59	Channel 1	X	
EXS CC1	X	Channel 1	User definable CC
EXS CC2	X	Channel 1	User definable CC
EXS CC3	X	Channel 1	User definable CC
EXS CC4	X	Channel 1	User definable CC
Program change	X	X	
System Exclusive	Yes	Yes	Only on USB port, see next chapter
System common	X	X	
System real time	X	X	

Special features

External Sequencer function			
Note on/off	Channel 5	Channel 1	Link active with Live or Arp mode
USB to midi or CV/Gate conversion			
Note on/off velocity level	Channel 4	Channel 4	Only with Xpansion 2 module

EXP-1 System Exclusive open source protocol

The EXP-1 features an open source System EXclusive protocol. By doing so FingerSonic strongly encourages the hobbyist and the enthusiast to program their own software to edit the internal parameters with no limits!

EXP-1 Open source SYSTEM Exclusive protocol

Sysex message

					Model ID	Message ID	Storage	Message N	Message data follows
F0	0x00	0x00	0x00	0x00	0x01	XX	XX	XX	->

Message ID list:		Message N list	
0x01	Drum pattern	From 0 to 15	Represents the 16 steps of pattern
0x02	Bassline pattern	From 0 to 15	Represents the 16 steps of pattern
0x03	Bassline pattern octave	From 0 to 15	Represents the 16 steps of pattern
0x04	Bassline pattern note on	From 0 to 15	Represents the 16 steps of pattern
0x05	Bassline pattern accent	From 0 to 15	Represents the 16 steps of pattern
0x06	Bassline pattern slide	From 0 to 15	Represents the 16 steps of pattern
0x07	Piano pattern	From 0 to 15	Represents the 16 steps of pattern
0x08	Piano pattern octave	From 0 to 15	Represents the 16 steps of pattern
0x09	Piano pattern noteon	From 0 to 15	Represents the 16 steps of pattern
0x0A	Synth pattern	From 0 to 15	Represents the 16 steps of pattern
0x0B	Synth octave	From 0 to 15	Represents the 16 steps of pattern
0x0C	Synth note on	From 0 to 15	Represents the 16 steps of pattern
0x0D	EXS pattern	From 0 to 15	Represents the 16 steps of pattern
0x0E	EXS pattern octave	From 0 to 15	Represents the 16 steps of pattern
0x0F	EXS pattern noteon	From 0 to 15	Represents the 16 steps of pattern
0x10	Synth preset	From 0 to 14	See description below
0x11	Bassline preset	From 0 to 5	See description below
0x12	FX reverb preset	From 0 to 1	See description below
0x13	Song pattern list	From 0 to 15	Represents the 16 pattern number list of the song
0x14	Synth pattern slide	From 0 to 15	Represents the 16 steps of pattern

Note: for drums the patterns are coded as a bit field on the pattern bytes representing the 10 voices
For synths, the pattern byte contains the midi note value, the octave contains the 0,1,2 for Down normal up. The note on contains 0 or 1

Synth preset format:	Type	Range	
Message N		min	max
0 Synth cutoff	Float	0	0.32f
1 Synth reso	Float	0	0.95f
2 Osc1 & 2 waveform, tuning knob position	unsigned char	0	2 for osc waveform 24 for tuning
3 Adsr1 attack	Float	0.01f	1.0f
4 ADSR1 decay	Float	0.01f	1.0f
5 Adsr1 sustain	Float	0.01f	1.0f
6 Adsr1 Release	Float	0.01f	1.0f
7 Adsr2 Attack	Float	0.08f	1.0f
8 Adsr2 decay	Float	0.08f	1.0f
9 Adsr2 sustain	Float	0.08f	1.0f
10 Adsr2 release	Float	0.08f	1.0f
11 lfo2 frequency	Float	0	20.0f
12 lfo2 depth	Float	0	0.1f
13 lfo1frequency	Float	0	20.0f
14 lfo1 depth	Float	0	1.0f

Message N			
Bassline preset format			
0 Bass cutoff	Float	0	0.32f
1 Bass reso	Float	0	0.95f
2 Bass env mod	Float	0	0.2f
3 Bass decay	Float	0.000009f	0.000509f
4 Bass accent	Float	0	0.1f
5 Bass tuning knob, disto FX & osc waveform	3 unsigned char	0	24 for tuning, 14 for disto, 1 for waveform

Message N			
Reverb preset format			
0 FX delay time	1 unsigned char	0	127
1 FX delay feedback	float	0	1.0f

Note: Values outside range are ignored

Technical specifications

CPU:

120 mhz ARM CORTEX M4
1 MB Flash
196 Kb Ram
32 Kb Eeprom for user data

Power supply

6 X 1.5V AA batteries or through USB port.

I/O:

USB 2.0 High speed
3.5mm Line out / headphones
8 ohm 1 Watt internal mini speaker
3.5mm MIDI input & output port (Only for Gold version or with Xpansion2 optional)

Display

128 X 64 graphical FSTN display

Firmware

FingerSonic FaderOS for EXP-1 V 1.0

Audio

Sample rate 44,1Khz
Bit depth 16 bit
Channels: 1 stereo
Virtual analog synthesis
Multitimbral
15 voices total

Dimensions

173 X 161 X 44 Gold edition/Xpansion 1 mounted
173 X 161 X 39 Base edition

For more Information, please visit www.fingersonic.com

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