PROPHET64
SID MUSIC SOFTWARE

Mono Synthesizer

Mar 5, 2007

Introduction

Thank you for choosing the Prophet64 line of software.

The Prophet64 Mono Synthesizer works as a monophonic synthesizer, imitating the behaviors and sounds of classic analog machines with the C64 audio circuit.
The idea is to put all processing power and audio features into a one-voice synthesizer, thereby increasing its parameter resolution and modulation capabilites beyond the rest of the Prophet64 applications. This makes it a great supplement to the Prophet64 family and a handy tool for your creative needs whenever you want to unleash that SID power in your studio.

The program was designed with live-tweaks in mind letting you connect up to four game paddles or home-built potentiometers. With these you can alter any parameter value by turning the knobs just like on a real analog synthesizer. It greatly enhances the feeling and boosts your performance!

The built in TB-303 like sequencer (slide included) helps you to output the sound into repetitive patterns and synthesizer riffs. To further assist your creativity the Advanced Random Composer lets you create random patterns in a controlled manner.

The *KEYBOARD* mode was added as a special feature. It's sort of a pseudo-MIDI mode where the Mono Synthesizer listens to keyboard input and plays notes and slides accordingly
(note: This requires a dedicated converter to translate incoming MIDI signals).

To play along the rest of your MIDI equipment, Prophet64 Mono Synthesizer features the DIN-sync (SYNC24) standard to slave the step sequencer to external MIDI sequencers. The software is then easily incorporated into your studio and the magic sound of the C64 is yours, right there at your fingertips.

To utilize SYNC24 you will need to build a simple connector and hook it up to a MIDI-to-SYNC24 converter.

Using the Prophet64 Mono Synthesizer

Starting up

To start the Mono Synthesizer, select *Mono Synthesizer* in the startup menu and press return.
The program loads from the cartridge and starts up in approx. 8 seconds.
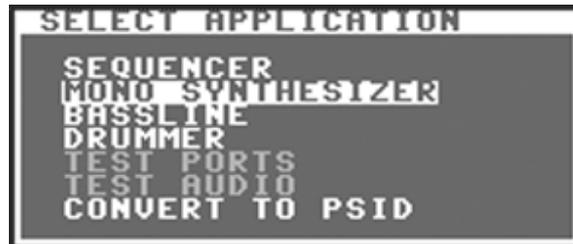
Note:

The user is strongly adviced to carefully read the instructions on how to properly handle the cartridge in the booklet *Prophet64 - Getting Started* available for download on our site at http://www.prophet64.com.

Main Screen

The Mono Synthesizer Main Screen is the the default outlook when started up.
From here you alter the sound, change patches and edit the patterns to play.
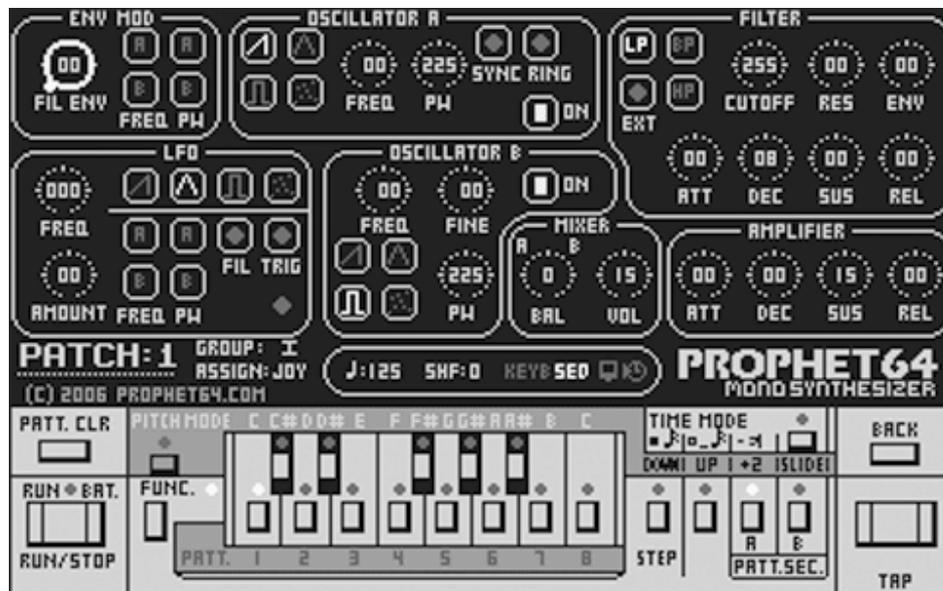
The Main Screen consists of three elements:

Sound Controls

The Sound Controls reside in the upper part of the screen. Those are all the parameters that shape the current sound. Every parameter is accessed with a dedicated key on the C64 keyboard. Some of them share the same key thus requiring multiple key-presses to activate. The cursor follows the active parameter of choice and the control you have chosen to use (joystick or potentiometer) changes that parameter only.

Up to four active controls can be assigned one at a time where the active parameter(s) is shaped like a virtual knob and depicts the current value. This way the "knob" is set in the circular position relating to its parameter value and changes as you turn the potentiometer. You can easily read out the value roughly just by looking at the knob's position.

When using more than one potentiometer they can all be turned simultaneously.

General Controls

The General Controls feature fast access to change patches, input control assign, tempo, patch, bank etc.

The **CRSR** keys left and right select the General Control pictured as a dotted line below the active parameter. Holding **COMMODORE** (**C=**) key while pressing the **CRSR** keys left or right alters the value.

Sequencer

The Sequencer is where you create a pattern to play the sounds. It closely resembles the Roland TB-303 step sequencer and operates in three different modes; Normal Mode (for playing), Pitch Mode (for entering note data) and Time Mode (to enter a timeline for your notes).
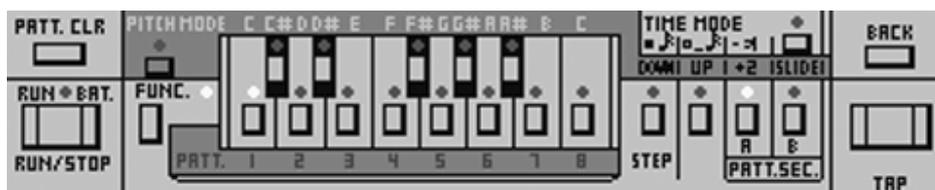
Beginners may have some difficulties to grasp the concept at first but once you get a hold of it you will see the great potential creating interesting compositions with this tool. However, there is an additional graphic editor in the *Advanced Random Composer* too.

Last, there is a second screen provided:

Setup Screen

By pressing **CTRL** key, you access the second screen of the Mono Synthesizer. From here you can alter settings like which control to use and whether you run the software on a PAL or NTSC machine. The Setup Screen also contains the file operations to save and load your projects as well as individual patterns and patches.

Furthermore, the Advanced Random Composer feature helps you to create random patterns.

The Setup Screen user interface has several windows in a DOS like environment. You open the windows with the drop-down menu using the **CRSR** keys, **RETURN** and ← keys.

Modes

The Mono Synthesizer main screen operates in three different modes:

Normal Mode

Normal mode is the default mode in which you edit sounds, select patterns, play patterns and synchronize the Prophet64 to external units.

Pitch Mode

In pitch mode you enter and edit all the notes for the current pattern. When pitch mode is activated playing stops and sounds cannot be edited. General controls section is not available either.

Time Mode

Here is where you enter the timeline for the notes in the current pattern. When time mode is activated playing stops and sounds cannot be edited. General controls section is not available either.

Tranpose Mode

Not really an operating mode but a special state in Normal mode, transposing is activated to effectively alter the transpose setting for the current pattern playing.

Quit/Reboot

You can quit the Mono Synthesizer and return to the startup menu at anytime by entering the Setup screen (**CTRL** key) and select the *Reboot* menu item in the *QUIT* menu.

User Input Controls

Prophet64 Mono Synthesizer uses two types of input controls: Joystick and Potentiometers.

Joystick

Joystick is the default choice of input control at startup. The joystick only registers up and down movements to increase/decrease the current parameter value. Press the **FIRE** button to speed up the rate of alteration.
Joysticks are plugged into controller port #2, that is the one just next to the power switch.
The reason why controller port #1 is not used for joysticks is due to the C64 keyboard conflicts.
Using the joystick control may result in spontaneous key presses why the application responds in ways you certainly did not wish for.

Potentiometers

A potentiometer is a variable resistor that changes the resistance when you turn its knob. The Commodore 64 is capable of sampling that value for applications such as the Prophet64.
Four potentiometers are handled simultaneously by connecting two pots into each controller port. These operate without keyboard conflicts.
Prophet64 Mono Synthesizer is fully configurable so that you can freely select which pots to use or not.

Technically, it is the audio chip inside the computer that takes care of handling the potentiometers. If your audio chip pot-readers are defective in any way, one or more pots cannot be used. The same goes for a computer with the audio chip pulled out. Check out the Test Ports window in the Prophet64 Cartridge Startup menu to test your potentiometers.

Old game paddles designed for Commodore computers are in fact the same thing. If you manage to find one or two of those, you have a true retro style computer and are more than ready to take on some tweaks with the Mono Synthesizer.

Select control

Being a modern computer user, one has gotten used to things like plug and play these days. However, the Prophet64 Mono Synthesizer has no way of auto-detecting the control currently attached to your computer. Unless you just started up the application and intend to run a joystick (default), you will have to take care of setting the controls yourself:


Open the Setup Screen by pressing the **CTRL** key.
Navigate with the **CRSR** keys to the second menu from the left: *SETTINGS*
Open up the drop-down menu and select *Controls*.

The first option sets the current control type, either joystick or potentiometers (*POT* / *JOY*). As you select POT, all four potentiometers can be turned on or off individually.

```
CONTROLS
CONTROL: POU
L-SHIFT: OFF

POT 1-X:    ON
POT 1-Y:    ON
POT 2-X:   OFF
POT 2-Y:   OFF

S24-64 : SYNC
```
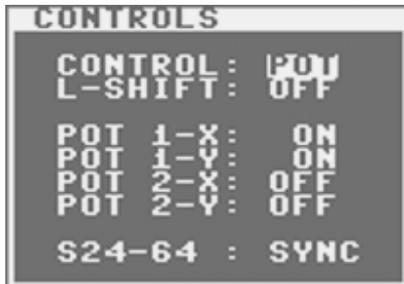
The second option blocks the potentiometers unless the **LEFT SHIFT** key is depressed. Why?
Well, as you will notice, potentiometers can be a bit 'shaky' switching values periodically.
It's not so much of a problem when turning the VCF frequency or LFO amount but causes unintentional tweaks in case you select the wrong parameter by accident.
The L-Shift option only passes through your pot movements whenever the **LEFT SHIFT** key is depressed. Release it and the pots have no effect on the parameter value.

With the L-Shift option activated it is fully possible to hit the **CAPS LOCK** key and manually cancel the shift key prevention. This is not recommended as it may cause C64 keyboard conflicts and select unwanted parameters.

Assigning potentiometers

When using potentiometers in the Main Screen you can tweak them all at the same time and all the knobs will turn accordingly. However, selecting the active sound parameter for each individual potentiometer is done one at a time. The *Assign* parameter in the General Controls section holds the current active potentiometer.

As the pot is activated, pressing the sound control keys will select the active knob for that specific pot.

Alias	Controller port pin
1-X	1
2-X	2
1-Y	1
2-Y	2

S24-64II Keyboard Mode

When started up, Prophet64 Mono Synthesizer operates in *Sequencer* mode at default.
That means it responds to internal/external clock and plays the step sequencer whenever it is started.

Switching the Mono Synthesizer into *Keyboard* mode stops synchronization, even internal clock, and the step sequencer deactivates. The application is now running in keyboard mode listening for keyboard data on the user port.
To accept such data an external dedicated converter must be used as a gateway between MIDI information and the Prophet64.

The Keyboard and Sequencer modes are toggled in the General Controls by switching between *KEYB* and *SEQ*.

There is an additional setting for keyboard/sequencer mode in the Setup Screen (controls menu) too.

Playing Patterns

Playing patterns on the Prophet64 Mono Synthesizer is pretty straightforward.

Open the demo patterns

To have some patterns to play around with you can start by opening the Demo project save. The demo save contains sounds and patterns to try out the software.

To load the demo enter the Setup Screen using the **CTRL** key. Then, using the **CRSR** keys to navigate and **RETURN** key to select, choose to *Open* in the *FILE* menu.

Now select the last item, *DEMO* and press **RETURN** key. Press **Y** key to confirm when you are asked if you are sure to load the demo.

Loading is ready in a split second. Use ← key to return to the main screen.

Select patterns

Prophet64 Mono Synthesizer contains a total of 64 patterns organized into four groups.
With a specific group selected you can play any of its 16 patterns.
Patterns are arranged into sections of two with eight patterns in each section.

To select a pattern use keys **1** - **8**.

To switch section use keys **£** for section *A* and **CLR/HOME** for section *B*.

Selecting a pattern when another one is playing will put the next one on hold until it's time to play it. Patterns that are currently playing flashes in sync with the current tempo. Patterns put on hold do not flash until they start playing.

Run mode

To start playing press the **RUN/STOP** key. The LED on the run/stop button lights up to indicate that the 'machine' is now in run mode. Press **RUN/STOP** key again to stop playing.

If Mono Synthesizer is slaved to an external clock the sequencer starts when the Sync24 master device sends a RUN signal. The run/stop button has no effect.

Tempo

You set the internal tempo in the general controls section. The BPM value displayed is an estimated value.

If you are running the software on an NTSC-machine, make sure to adjust the system setting to NTSC (see the chapter *Settings* for more info).

Shuffle

The shuffle setting is next to the tempo setting.

Shuffle alters the 'swing' of the playback with various
amounts and manipulates the sync signal accordingly. Too high a shuffle set at higher tempos may cause drop outs.

Sync Out

At all times (except when in Keyboard mode) the Prophet64 Mono Synthesizer mirrors the sync clock (both internal and external) on the SYNC OUT pins of the s24-64II interface.

Chain Play

You can play a row of up to eight consecutive patterns by holding down the key for the first one and then the last one. The row of patterns lights up with the active one flashing.

When selecting new patterns or a new chain of patterns Mono Synthesizer first plays through the old row of patterns before moving on to the next.

Transpose

Press and hold **F5** key to enter transpose mode while playing.
While holding F5 key, select a note for the transpose with the upper C64 keyboard.
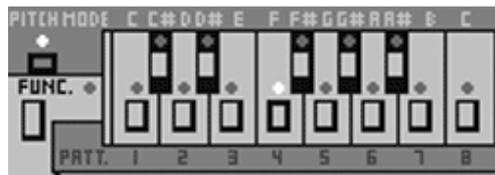
The selected transpose starts at the next measure playing, if a whole chain of patterns are active the transpose starts at the next round.
When you restart the sequencer, the transpose value is reset to normal (none).

Release the **F5** key to exit transpose mode.

Note:

Tips! If you want to start the transpose immediately without waiting for the next measure, hold down the **RIGHT SHIFT** key while pressing the transpose key.

External Pattern Select

An external device like the Prophet64 Sequencer Edition can send a pattern select signal on the s24-64II interface. If the Mono Synthesizer is running on external synchronization, it switches the current pattern in realtime.
The booklet *Prophet64 - Getting Started* (available for download on our site) contains the pin in/out information for pattern select connections.

External Synchronizing

All Prophet64 editions are compatible with SYNC24. When connected to a MIDI to SYNC24 converter that means they play along MIDI master sequencers.
The converter goes into the user port with the s24-64II interface standard as described in the booklet *Prophet64 - Getting Started* (available for download on our site).

To activate SYNC24 (external synchronization) and switch the Mono Synthesizer to slave mode, use the general controls and move the cursor to the clock icon.
When active, the clock icon lights up in blue color.

Editing Patterns

Editing patterns on the Prophet64 Mono Synthesizer is much like using the Roland TB-303 step sequencer. Even though a beginner might find the concept a bit confusing at first, it is quite simple once you have learned to use it.
If one seeks to create different harmonic textures that stand out, the TB-303 way of editing surely is a good place to start.

The procedure is to first enter the notes included in the pattern. Second is to edit a timeline, i.e. when and where to trigger the notes. This is quite the opposite of other sequencers where notes and timelines are blended together (like grid editors).

The current pattern selected is the one you edit. If you have a whole chain of patterns selected, only the first one is affected by the edits.

Pitch Mode

The notes are entered into the pattern in Pitch Mode. Enter Pitch Mode by pressing the **F1** key.
If the sequencer is running it stops immediately.

Pitch mode disables sound parameters and general controls. All you can do is to enter the notes into the selected pattern.
When pitch mode is active the LED lights up and the normal mode LED goes out.

A pattern contains up to 16 notes. As you press the keys **Q 2 W 3 E R 5 T 6 Y 7 U I** on the upper part of the keyboard you input the note into the pitch storage of the pattern. The note counter increments until it reaches the max at 16 and flips over to the first note again. You can reset the counter manually at anytime by pressing the pitch mode button (**F1** key) once again. Notes that are entered overwrite the old ones.
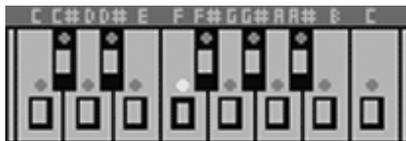
The note LED lights up when you press the corresponding key.

Pressing the octave buttons (**+ - £** keys) simultaneously as a note button toggles the note's octave.
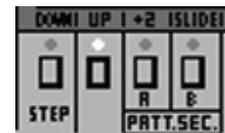
Using the Tap (**RETURN** key) and Back (**INST/DEL** key) buttons you can step through the note data back and forth without altering the notes. Press and hold the Tap button and you can alter the octaves and slide for the current note. Read more about the slide further down this chapter.

Time Mode

After entering a set of notes into the pattern it is time to create the time line.
The length of the time line is equal to the pattern length. Each step defines whether to:

- Trig a new note (i.e., pick one from the list of notes you entered in Pitch Mode)
- Pause 1/16th step and hold (tie) the previous note
- Pause playing, no sound for 1/16th step.

Enter Time Mode by pressing **F3** key. If the sequencer is running it stops immediately.
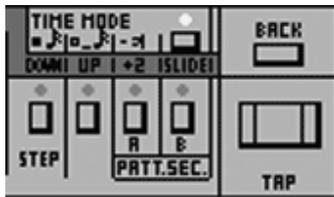
Use the following keys to define the timing information for each 1/16th note:

+ key   Trig note
- key   Pause and hold
£ key   Pause and silence

It is not possible to insert a pause-and-hold after a silent pause, the time mode editor adjusts this automatically.

Use Tap button (**RETURN** key) to step forward in the editor. The corresponding LEDs light up and display the time data for each step. Stepping backwards is not possible.

When the step counter has reached the pattern length Time Mode is exited to Normal Mode.
If you wish to do this manually at anytime, press the Normal Mode button (**F7** key).

Slides / Octaves

If you press and hold the Tap button (**RETURN** key) in pitch mode, slides and octaves are toggled with the following keys:

DOWN button	**(+ key)**	one octave down
UP button	**(- key)**	one octave up
+2 button	**(£ key)**	two octaves up
SLIDE button	**(CLR/HOME** key **)**	slide

Whenever the sequencer plays a note that contains a slide, it instantly starts to slide from the previous note. However, if the note was preceded by a silent pause, the slide is ignored, obviously, and the note triggers as normal.

Pattern Length

Pattern lengths are variable in 16 steps. You set the length pressing and holding Normal Mode button (**F7** key) and tap the DOWN button (+ key) the number of times its new length.
E.g., if you wish the pattern to be 12 steps long, press and hold **F7** and tap the DOWN button twelve times.

All patterns defaults to a length of 16 at startup.

Cut / Copy / Paste

Cut-Copy-Paste operations are performed by pressing and holding the PATT.CLR button (← key) together with the pattern you wish to cut, copy or paste into.

The screen border turns white and the software stops and awaits your choice of action. Then press:

- **X** key   to cut the pattern selected. The pattern is erased and its contents are placed into the copy buffer.
- **C** key   to copy the pattern selected. The pattern is left untouched but its contents are placed into the copy buffer.
- **V** key   to paste the copy buffer data into the pattern selected.

As you can see Mono Synthesizer uses the same standard keys like any other PC operating system for cutting, copying and pasting so it's quite easy to remember.

When you have performed the copy/paste the screen border returns to black and you regain control of the program.

Note:

If you wish to cancel your Cut-Copy-Paste operation as the screen turns white, you can simply press the **RUN/STOP** key. That is good to know if you accidentally enter the copy mode with no intentions of cutting your current pattern nor overwriting the copy-buffer.

Edit Sounds

The Prophet64 Mono Synthesizer can store eight patches with your sounds.
A patch is the full collection of parameters that makes up the sound you are playing.

Changing the current patch

Change the current patch with the general controls. Put the general control cursor under PATCH and hold the **COMMODORE** (C=) key. Then scroll through the patches by pressing the **CRSR** keys and the patch is changed instantly.

The Structure of a Sound

The Mono Synthesizer sound layout is formed of two oscillators, A and B, playing in unison. Each oscillator has four different waveforms and separate tuning. There are additional effects for the oscillators such as ring modulation, waveform synchronization and fine tune.
The filter has a hardware envelope that can be routed to modulate both oscillator frequency and pulse width also. Filter types are low pass, band pass and high pass or all combined. External sources can be filtered too.
The third SID oscillator operates as an LFO capable of modulating oscillator frequency, waveform pulse widths and filters. It runs on four waveforms.
Volume curve is set by the SID hardware envelope.

Note:

Each parameter described in this chapter is accessed with a certain key on the C64 keyboard. In this manual's appendix you will find a complete list of those keys.

Oscillator A

The Oscillator A section contains all parameters to control Oscillator A.

Waveforms
The symbols on the left represent the available SID oscillator waveforms. Though this software allows you to add waveforms freely it's not certain that it will produce the results you want. The 8580 is capable of mixing the sawtooth, triangle and pulse waveforms whereas only triangle and pulse generally work with the 6581. The noise waveform cannot be mixed.

Frequency
The frequency parameter sets the pitch for Oscillator A in semi-note steps. You can pitch it up and down 24 semi-notes.

Pulse Width
When selecting the pulse waveform the PW (Pulse Width) parameter adjusts the width of the pulse wave. This produces a variety of sounds ranging from the total bleepiness of a full pulse width to warmer or sharper sounds with a narrow pulse.
Modulating the pulse width produces animated sounds that are similar to two detuned oscillators. Classic C64 leads and fat bass sounds were built up this way. The default value of 225 is a completely full pulse width.

Waveform Synchronization

To synchronize a waveform means locking Oscillator A's frequency to the frequency of Oscillator B. To hear the typical sync effect you need to change either oscillators frequency manually or with the envelope/ LFO. Take a look at factory patch #5 for some examples. Synchronization is a SID hardware feature.

Ring Modulation

With this effect oscillator A becomes ring modulated to oscillator B. The outcome is completely dependent on oscillator A's frequency in relation to osc. B. When modulating frequencies, go for osc. A.
Ring modulation works best when using the triangle waveform on both oscillators.

On

The On-setting toggles the oscillator on/off. Note that this parameter is turned on/off inverted to the others. Push your controller up to turn it off and down to turn it on. When turned off, Oscillator A is completely shut off.

Oscillator B

The Oscillator B section contains all parameters to control the Oscillator B. Those are the same as for osc. A.

Fine

The only thing that differs osc. A and B sections is the extra Fine tune parameter. It enables you to tune the B-oscillator up or down in fifty steps each.
Fine tuning two oscillators is a great way of adding "air" to your sound. Overdo it and you get the classic Euro-pad, like factory patch #2.

Mixer

Balance

Balance sets the balance between oscillator A and B. Actually the SID oscillators do not have individual volume settings. The only way to manipulate the volume is through the VCA envelope.

The balance setting is therefore a software compromise. It adjusts the VCA sustain value for the oscillators respectively to match the balance setting. It works really well when using an envelope with a maximum sustain value and preferably a zero decay. Keep this in mind when relying on balance in your current patch: tweaking the envelope may cancel the balance effect.

Volume

The volume parameter directly affects the overall SID volume level.
If you experience distorsion when using the filters, try to lower this level one to three steps and see if it helps out.

Filter

The filter section gives you direct control of filter type, frequency tweaks and the filter envelope.

Filter Type

You can set the SID filter to LowPass, BandPass or HighPass. Any of the three filter types can be combined with various results. If you wish to input an external signal through the C64 audio input/output activate the EXT parameter.

Cutoff Frequency

The cutoff frequency is directly routed to the SID filter frequency. It works as long as no other modulator affects it.

Resonance

Sets the SID filter resonance.

Envelope modulation

This parameter affects how much the filter envelope modulates the filter in 32 steps. When tweaking it, it's a good idea to leave cutoff frequency at a zero value. That way the filter wont jump up to whatever setting the frequency parameter has got when you reach the parameter bottom (as zero envelope amount 'releases' the filter modulation).

Envelope

The envelope parameters Attack, Decay, Sustain and Release operates a SID envelope especially dedicated to the filter. It can also be routed to modulate other parameters in the Mono Synthesizer.
Beware of that SID envelopes have some flaws that make them behave irrationally.
Read more about it below in the section *A word about the SID envelopes*.

A word about the SID filter

In a perfect SID world the filters would work just like any other analog, digital or software synthesizer. Unfortunately the filters were inconsistent in between the SID revisions. All of this is covered in the booklet *Prophet64 - Getting Started* available for download on our site.
In short, older SIDs do not produce as good a sound with its filters. In fact, some really old ones are completely silent when the filters are turned on. In that case Mono Synthesizer and Bassline editions might appear not to work at all.

Amplifier

The amplifier section controls the volume envelope that shapes the volume curve of the sound.

Attack, Decay, Sustain and Release all affects the built in SID VCA envelope.

A word about the SID envelopes

Sid envelope anomalities make them fail to trigger properly every five to eight notes or so. The effect is apparent when you lower the sustain value and start applying decay settings. To overcome the constant 'hiccups' one trick is to set the attack time to a non-zero value, like 1. If you don't wish an audible envelope attack, don't worry, the value of 1 is hardly noticable.

Envelope Modulation

The envelope modulation section routes the filter envelope to other destinations.

Filter Envelope
You can apply the filter envelope to the destination parameter in any of 32 steps. Zero means no modulation but does not turn it off. As long as any of the destination buttons are activated the Mono Synthesizer has 'locked' the filter envelope modulation to that particular destination.

Frequency
Filter envelope can be applied to the frequency of both oscillator A and B. Good examples of this are sirens and drum sounds with a sloped pitch curve. It's perfect for creating sync and ring mod. effects.

Pulse Width
The pulse width of both oscillators A and B can be modulated by the filter envelope. You wont hear the effect unless the oscillator is set to a pulse waveform.

LFO

The LFO in the Prophet64 Mono Synthesizer is in fact SID oscillator #3 running at a lower frequency rate. It can be used to modulate several parameters and set to operate in any of the four standard SID waveforms.

Frequency
You can set the frequency of the LFO in 255 steps. At zero the LFO stops completely. The LED in the lower right corner of the LFO section blinks whenever the LFO is higher than half its range. That way you can monitor the LFO speed.

Amount
With the amount parameter you decide how much LFO modulation to apply in steps of 32. Zero means no modulation.

Waveform
Selects any of the four SID waveforms: Sawtooth, Triangle, Square or Noise.

Frequency
You can set the LFO to modulate the frequency of either oscillator A, B or both. A common use for this is when creating a vibrato.

Pulse Width

This parameter routes the LFO amount to the pulse width of either oscillator A, B or borth. By modulating the pulse with a lower frequency rate, classic C64 pads and bass sounds come to life.

Filter

Toggles the filter cutoff frequency as LFO destination.

Trig

Activating the LFO to trig means that it restarts at every new note without a slide.

How to Improve Audio Quality

As you have probably noticed, the SID has an unusually noisy output. Much of the noise comes from other internal circuits inside the C64 like the VIC (graphic chip). You can therefore reduce the noise and clean up the audio output significantly just by turning the VIC off (blank out the screen).

You can do this at any time by simply pressing the **SPACE BAR** key. Press it again and the screen reappears.

A convenient way to put this off your checklist when recording is to make use of the automatic blank-screen feature. It blanks the screen whenever the sequencer starts playing and brings it back when it stops. External or internal sync does not matter, it works in both modes.

You find the setting in the general controls as a monitor icon (or TV-set if you like).

Modulation Conflicts

When you try to use several modulation sources for the same destination there is a conflict in the Prophet64 Mono Synthesizer. As there can be only one modulator at a time some of the sources has higher priority than others. Keep this in mind if you wish to tweak the filter frequency and nothing happens. One or several modulators are probably activated.

Tap

You can test the sound at any time by pressing the tap button (**RETURN** key). This produces a middle-C tone as long as you keep the tap button depressed. A great way to quickly test your current patch.

The tap feature works in normal mode only.
It is disabled when Mono Synthesizer is set to external sync mode.

Settings

The Mono Synthesizer settings, i.e., controls, synchronization etc, are available in the Setup Screen. Access the screen by pressing the **CTRL** key and use the **CRSR** keys, ← key and **RETURN** key to navigate, cancel and select action.

Controls

Pot/Joy settings were covered earlier in this manual. Check out the section *Select Control* in the chapter *User Input Controls* to learn how to select controls for this application.

Keyboard / Sequencer mode
The main screen of the Prophet64 Mono Synthesizer operates in two basic modes. The default mode is *Sequencer* where the step sequencer is fully functional either with internal or external synchronization.
In Keyboard mode however, the sequencer is turned off. So is external synchronization, pattern select and sync out so that Mono Synthesizer can utilize the full user port to respond to note and slide commands instead.
This requires an external converter that translates MIDI information to s24-64II note data.

The current mode is altered in either this window (controls window) or directly in the General controls section (main screen).

Synchronization

Clock
This setting selects whether to use an internal (default) or external synchronization clock for the Mono Synthesizer. Internal clock is generated at fixed tempo rates, external clock is fully controlled by a connected SYNC24 source. You can toggle this setting via the general controls section on the main screen also.
Read the booklet *Prophet64 – Getting Started* for information and schematics for the s24-64II interface which is needed to synchronize the Prophet64 with SYNC24. You will also need a MIDI to SYNC24 converter.

Tics
Tics refers to how many clock tics it takes to forward the sequencer one beat. A value of 24 is the standard sync rate whereas 48 makes the Prophet64 play at half speed thus needs the double tempo to keep up.
48 tics is a great way of getting some extra shuffle resolution

Shuffle
Shuffle is another word for "swing" i.e., every second 16th note is delayed. Prophet64 is capable of manipulating the clock signal to create a shuffle effect even for the external clock.
There are seven settings for shuffle that changes the second note delay.
With 24 tics/beat you won't hear an effect of all seven values, you will have to use 48 tics/beat for that.
The shuffle setting is accessed in the general controls section on the main screen.
Extreme shuffle settings may cause drop-outs.

Pattern Select

Whenever the Prophet64 Mono Synthesizer is switched to external sync mode it listens to Pattern Select commands on the s24-64II interface. Pattern select commands are sent from either a dedicated external converter or the Prophet64 Sequencer Edition.
Check out the booklet *Prophet64 – Getting Started* for more info on how to build or modify the s24-64II interface to accept pattern select commands.

Sync Out

The s24-64II bypasses the current sync signal on two output pins, RUN out and CLK out. It does not matter whether the Prophet64 runs on internal or external clock, the sync is always mirrored on those pins. This way the Prophet64 can function as master clock or as a sync thru unit.
Check out the booklet *Prophet64 – Getting Started* for more info on the sync out feature.

System

The system window includes two parameters related to the computer's system.

System

Commodore 64s came in two different versions, one for the NTSC TV-system and one for the PAL TV-system. Since NTSC versions run a little faster and play music at a slightly higher pitch, it's a good idea to adjust the Prophet64 to whatever system your computer was built for.
So how do you know what system your C64 is adapted to? Well, it's a matter of knowing what type of TV-system your country/region has got. Generally one can say that most of Europe run the PAL system whereas North-America and Japan use NTSC.

SID #2

If you have a second SID installed (like a SID2SID circuit board) you must activate the second SID feature manually.
When active, Prophet64 Mono Synthesizer mirrors the sound to the second SID so that you can connect both audio circuits and blend them in a mixer as one mono channel or spread them out to create a stereo effect.
The Prophet64 Sequencer and Drummer editions use the second SID as addons to double the number of 'voices' or 'tracks'.

Slide Time

The slide time is adjustable in four steps on the Mono Synthesizer.
That means it can be used both as a legato portamento effect as well as a 303 slide.
A setting of 3 (default) is equal to the TB-303 slide.

Advanced Random Composer

The Advanced Random Composer (A.R.C.) is a built in randomize feature where you can create harmonically interesting results from a set of rudimentary input parameters.
The program then uses those parameters to fill a pattern with total random notes, though pre-determined out of your settings.
The result can be anything from totally awsome new inspiring music to a complete mayhem, it all depends on your inputs.

Your C64 needs to be equipped with a fully operational SID in the original socket (SID oscillator #3 is used to obtain random numbers).

The A.R.C. is located in the Setup screen. Press the **CTRL** key to access it and then use the **CRSR** keys to navigate to the *A.R.C* menu.

Random patterns are created by first telling the A.R.C. how to operate (*Settings*) and then executing the randomizer itself (*Random!*).

Lock Notes

Use the upper and lower part of your C64 keyboard to toggle the notes you wish to include in the randomize process.
Press **CLR/HOME** key to clear all selected notes.

Length

The length parameter determines how many notes that will be included in the pattern.
Select any number of notes in between 1 and 16. If you choose RND, the A.R.C. makes a random decision for you instead.

Range

The locked notes can also be randomly placed in any octave. By setting a range of 1 to 3 octaves, you increase the octave span used in the random process.

Slide

Select whether to include a random slide or not.

SLIDE : ON

Accent

Accent is a feature of the Bassline edition. It is not available on the Mono Synthesizer.

Group/Section/Pattern

Select which pattern to use for the random process by choosing *Group* (1-4), *Section* (A/B) and *Pattern* (1-8). The current selected pattern is automatically pre-selected when entering the Setup screen. If you change the selected pattern in the A.R.C. it also changes the selected pattern for the main screen.

GROUP : 3
SECTION: B
PATTERN: 5

Random!

When you have completed the A.R.C. settings, enter the *Random!* menu item in the *SETTINGS* menu and the random process starts.
Note that if you haven't locked any notes for this process, the task exits.

A.R.C QUIT
SETTINGS
RANDOM!
————————
EDIT

When the A.R.C. is done creating your random pattern it automatically opens it with the editor window.

PROPHET64
RANDOMIZING!
. . . .

Example

Look at the picture of the overall A.R.C. settings in the top of this chapter and input the same parameters. Those settings have proved to produce interesting results more than often. Try it out, add some notes, try it with and without slide.
Learn to use the Advanced Random Composer as a tool to complement your creativity, or for that matter, a last minute help in absence thereof.

Editor

There is an alternative way of editing patterns featured in the A.R.C.
It is opened automatically when a random pattern has been created. You can open it manually by selecting the *Edit* item in the *A.R.C.* menu.

A.R.C QUIT
SETTINGS
RANDOM!
————————
EDIT

The editor is a simple form of piano-bar grid editor where the horizontal positioning of the 'dot' represents the timing and the vertical position its note value.

Navigating

Use the **CRSR** keys to move the cursor forward and backwards. The cursor is the vertical bar just above and below the grid. The lower left corner of the window shows the note value at the current position in plain text.

Each note octave is represented by different colors. Blue notes reside one octave down, green notes are played back at normal pitch whereas light green notes are transposed one octave up and yellow ones are the ones in the hightest octave (+2).
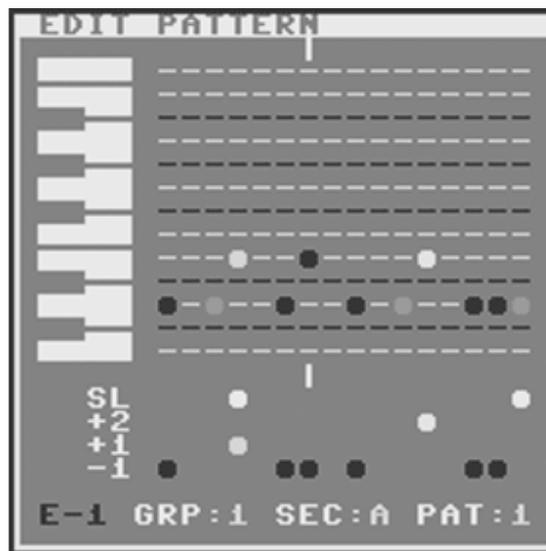
Delete

If you press the **INST/DEL** key all the notes to the right are shifted one step to the left overwriting the note at the cursor position.

Note that even the pattern length is decreased at the same time. If you wish to keep the same pattern length you will need to make the appropriate insertion to make up for the shortened length.

Insert

Opposite of delete is insert. When inserting a note, all the ones to the right are pushed one step forward. Use **RIGHT SHIFT** key together with the **INST/DEL** to perform an insertion. As you make the insert, the rest of the pattern is moved one step to the right and leaves an open space at the cursor position for you to insert a new note. Notes that are pushed out of the window are lost.

Clear pattern

Press **RIGHT SHIFT** key and **CLR/HOME** key to clear the whole pattern. You are asked to confirm your choice before the pattern is cleared.

Alter notes

Use the note keys (**Q2W3ER5T6Y7UI**) to alter the note value at the cursor position.
Octaves and slides are not affected.

Octaves
Use **+**, **-** and **£** keys to toggle the octave on the note at the cursor position. If you try this
at a point where there is no note, no data is changed.

Slides
Use **CLR/HOME** key to toggle a slide for the note at the cursor position. If there is no
note there, no data is changed.

Change pattern

When you start up the editor it holds the current pattern selected.
You can change this at any time.

F1/F2 keys   change banks
F3 key   toggle section A/B
F5/F6 keys   select pattern

If you change the pattern in the editor, it stays selected as you return to the Main screen.

Toggle grid

You can toggle the grid on/off by pressing the **F7** key.
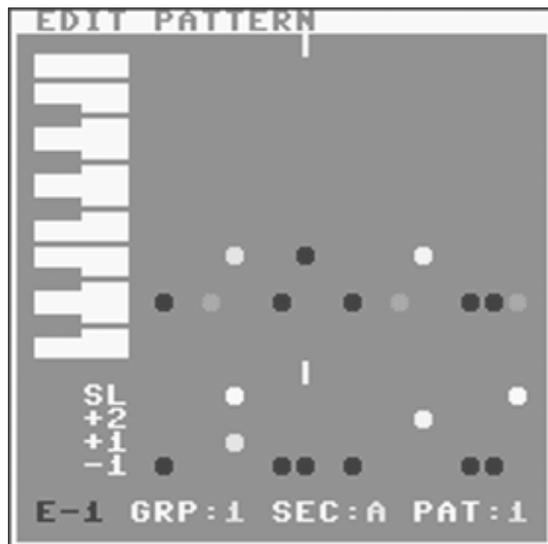
Files

Press **CTRL** key to open the setup screen. From here you access the Mono Synthesizer file operations. Use **CRSR** keys and **RIGHT SHIFT** to navigate and **RETURN** key to execute a function/select file etc. Use ← key to cancel/step back.

Media

Mono Synthesizer uses three types of media to load and save data: disk, tape and SDR.

Disk
Loading from disk means that a directory window opens with a list of valid files on your floppy. You then select the file you wish to load.

The file operations for the floppy drive make use of the operating system's disk functionality. In practice this means that there are no delete-functions built in and no replace-and-save options. If you try to save the file onto disk using a name that already exists the save is interrupted and the drive light flashes.

When reading the directory the correct type of files are automatically collected. If there are no files of that particular type on the disk you will get a *No Files* error. It does not necessarily mean that the disk is empty rather than empty on that type of files.

The file type depends on the file operation you selected, whether it's a full project load or a specific import.

Prophet64 Mono Synthesizer File Types:				
File suffix	**Disk space**	**Tape nr**	**Size**	
.P64	11 blocks	≈ 23	2.5 Kb	Mono Synthesizer project
.PAT	1 block	≈ 7	< 1 Kb	Single pattern export
.PCH	1 block	≈ 6	< 1 Kb	Single patch export

Pattern export files are compatible with the Prophet64 Bassline and vice versa.

Tape

The tape functions are standard C64 and not turbo tape.

A small modification bypasses the regular start and record button sensitivity so that the user needs to initiate the start of a tape load or save him/herself.

This opens up the possibility to modify a digital audio source to replace the standard 1530 datasette unit.

```
PROPHET64

PRESS REC+PLAY ON TAPE,
THEN PRESS SPACE
```

Whenever loading and saving you will have to press **SPACE** key on the C64 to make the computer start the load/save.

When loading, Prophet64 Mono Synthesizer checks the type of the file found. If the file suffix does not match the correct one, loading is interrupted and you are notified.

If the file type is correct, loading automatically continues and the screen color turns green to confirm that the file is ok.

Note:

The tape motor is shut off at all times until you request a load or save. As the dialog box asks you to start recording or playing it is finally switched back on.

You probably need to rewind or forward the tape to the right position before loading or saving so now is the time to do so. Since the datasette buttons are not being sensed, pressing rew/ffw will not trigger the load/save. Only the **SPACE** key does.

SDR

SDR is short for Serial Data Register, a hidden feature never used by any peripheral device released for the C64 platform.

The SDR works with a serial data stream on the user port. A dedicated device must handle this data to store it on a separate media.

This makes file management an issue for the user and not the Prophet64 file functions. For example, one could save SDR data onto a digital device like pure audio data. The user then decides where to put the file, how to handle multiple saves etc.

```
PROPHET64

START RECORDING ON YOUR
DIGITAL DEVICE, THEN PRESS
SPACE TO SAVE

OR

START PLAYBACK AND PRESS
CTRL TO VERIFY
```

The procedure for saving and loading SDR data is very simple. You are asked to start your digital device and then press space to start the C64 read/write sequence.

Saving can be switched to verifying instead. That makes the program read from the SDR device comparing the saved data to the current memory. The save is then considered valid if the SDR data is identical to the memory data.

Several speeds are available for SDR save, enabling the output to fit various devices. Speed is selected when saving. SDR loading automatically adjusts to incoming data.

While saving and loading the screen flashes in different colors. For every new block of 256 bytes the set of colors changes.
If the type of the file found when loading is wrong, loading halts and you are notified.
Note that the C64 does not have any control of the SDR device's current state i.e., it cannot control the player to actually start or stop.

Opening the Demo Project

To open the demo project:

- Select *Open* in the *FILE* menu.

- Navigate with the **CRSR** keys to the menu item *DEMO*.

- Press **RETURN** key to select to open the demo project.
- Press **Y** key or **RETURN** key to confirm. The **N** key or ← key cancels.
- When the demo project is opened (takes a split second) press ← to return to the main screen.

Save Project

A project save includes all the patterns and patches and as well as control settings.
Make sure to save often to avoid losing your work!!

To save a Mono Synthesizer project:

Disk:
- Select *Save* in the *FILE* menu.

```
FILE SE
NEW
OPEN
SAVE
--------
IMPORT
EXPORT
--------
EXIT
```

- Use **CRSR** keys and select *DISK* as media source and press **RETURN** key.
- Enter a non-existing filename in the filename dialog.

```
FILENAME
SLICK SLIDE█
----------
```

   You can use all letters from *a-z* and *0-9* as well as some additional characters. Use
   INST/DEL key with and without the **LEFT SHIFT** key to insert/delete text.
   Press **RETURN** when ready or ← to cancel and go back.
- File saves onto disk. After saving is done press ← key to return to the main screen.
- If the disk already contains a project file with the same filename the drive light flashes
   and you are notified with a Save Error messagebox.

Tape:
- Select *Save* in the *FILE* menu.
- User **CRSR** keys to select *Tape* as media source and press **RETURN** key.
- Enter a filename in the dialog and press **RETURN** when ready or ← to cancel.
- A dialog box asks you to press REC+PLAY on your tape recorder and then press **SPACE**
   key to start the save. The tape motor is now unlocked for you to first rewind or forward
   the tape to the correct position.
- Press **SPACE** key to start saving.
- Screen goes blank while saving.
- When saving is done press ← key to return to the main screen.
- You can break the save operation anytime during saving by pressing the **RUN/STOP**
   key.

SDR:
- Select *Save* in the *FILE* menu.
- Use **CRSR** keys to select *SDR* as media source and press **RETURN** key.
- Enter a filename in the dialog and press **RETURN** when ready or ← to cancel.
- Select a speed for SDR. Start by using slower speeds and gradually try out the device
   with faster settings.
- Now make your digital device ready (start recording).
- Press **SPACE** key.
- Screen goes blank and flashes while saving.

- When saving is done press ← key to return to the main screen.
- You can break the save operation anytime during saving by pressing the **RUN/STOP** key.

Verifying SDR Saves

After an SDR save, data can be verified:

- Go through the save process once again from the start and enter the exact same filename.
- When the messagebox asks you to press space there is also an option to press **CTRL** key to start the verifying process.
- Press **CTRL** key. Screen goes blank.
- Start supplying data from your digital device (that is, play it back, not record!).
- If data is found to deviate from the current memory the verify process is interrupted and you are notified. If not, the verify process continues until the file is fully compared and you are notified that everything is ok.

Open Project

To open a Mono Synthesizer project:

Disk:
- Select *Open* in the *FILE* menu.

- Insert the disk with the project file you wish to open.
- Use the **CRSR** keys to select *DISK* as media source and press **RETURN** key.
- Wait until the directory is loaded.
- In the directory window use **CRSR** keys to navigate to the file you wish to load and press **RETURN** key to start loading. If you wish to cancel press ← key to go back one step.
  If there are no files on the disk you will be notified by a message box saying *No files*. In that case press ← key to go back, insert a new disk and try again.
- When the file is loaded you press the ← key to exit the files screen.

SDR:
- Select *Open* in the *FILE* menu.
- Use the **CRSR** keys to select *SDR* as media source and press **RETURN** key.
- Make your digital device ready.
- The dialog box asks you to press space and then start your digital device.
- Press **SPACE** key. Screen goes blank and awaits your digital device.
- Start your digital device (play back). Screen flashes as data is received.
- When the file is loaded press the ← key to exit the files screen
- If a file is found with a different file type type, loading stops and you are notified.

- You can break the operation anytime during loading by pressing the **RUN/STOP** key. However, this opens the initialize screen asking you to clear the memory.

Note:

Important! If you interrupt a load process of a Mono Synthesizer project you are warned that the application could suffer from an unrecoverable failure. While this is a major case for the Sequencer edition (all Prophet64 editions share file functionality) it is of lesser importance for the Mono Synthesizer. To not cause misbehavior of the application you are adviced to initialize memory if you for any reason have interrupted a load operation.

```
BREAK ERROR
  IMPORTANT!
  TO PREVENT AN APPLICATION FAILURE,
  YOU SHOULD ALWAYS INITIALIZE (NEW)
  THE PROJECT AFTER AN INTERRUPTED
  LOAD OPERATION!
  (IMPORTS ARE NOT AFFECTED)

  DO YOU WISH TO INITIALIZE THE
  PROJECT NOW?

        YES              NO
```
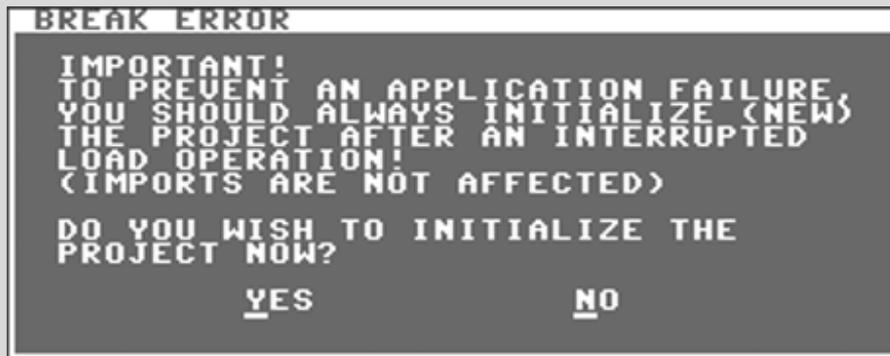
Press **Y** key or **RETURN** key to go through and initialize the memory.
If you do not carry out this initialization now you can do it later at any time with the *New* function in the *FILE* menu.
This message pops up if you interrupt an import also. However, imports cannot do any harm whatsoever so you can just ignore it.

Export Pattern

You can export the full content of a pattern onto disk, tape or SDR.
The exported pattern can be imported back into the Mono Synthesizer and Bassline editions.

To export a pattern:

- Select *Export* in the *FILE* menu.

```
FILE SE
NEW
OPEN
SAVE
-------
IMPORT
EXPORT
-------
EXIT
```

- Use **CRSR** keys to select to export a pattern then press **RETURN** key.

TYPE
PATTERN
PATCH

The pattern that is exported is the current pattern selected in the main screen.
If you have selected a chain of patterns only the first one is exported.

* Continue to read the section for your media choice below:

Disk:
* Use **CRSR** keys to select *Disk* as media source and then press **RETURN** key.
* Enter a non-existing filename in the filename dialog. You can use all letters from *a-z* and *0-9* as well as some additional characters. Use **INST/DEL** key with or without the **LEFT SHIFT** key to insert/delete text.
* Press **RETURN** key to start saving or ← to cancel.
* When done saving, press ← key to return to the main screen.
* If the disk you have inserted already contains a pattern file with the same name the drive light flashes and you are notified with a Save Error messagebox.

Tape:
* User **CRSR** keys to select *Tape* as media source and press **RETURN** key.
* Enter a filename in the dialog and press **RETURN** when ready or ← to cancel.
* A dialog asks you to press REC+PLAY on your tape recorder and then press **SPACE** key to start the save. The tape motor is now unlocked for you to first rewind or forward the tape to the correct position.
* Press **SPACE** key to start saving.
* Screen goes blank while saving.
* When saving is done press ← key to return to the main screen.
* You can break the save operation anytime during saving by pressing the **RUN/STOP** key.

SDR:
* Use **CRSR** keys to select *SDR* as media source and then press **RETURN** key.
* Enter a filename in the dialog and press **RETURN** when ready.
* Select the SDR speed.
* Now make your digital device ready (start recording).
* Press **SPACE** key.
* Screen goes blank and flashes while saving.
* When done saving press ← key to return to the main screen.
* You can break the save operation anytime during saving by pressing the **RUN/STOP** key.
* SDR saves can be verified as described in *Verifying SDR Saves* earlier in this chapter.

Import Pattern

Exported patterns can be imported into existing ones. Even exported Bassline patterns are compatible (except for the accent data).

The pattern is imported into the currently selected pattern on the main screen.
Selecting a chain of patterns does not matter, the import loads into the first one in the chain.

To import a pattern:

- Select *Import* in the *FILE* menu.

```
FILE SE
NEW
OPEN
SAVE
-------
IMPORT
EXPORT
-------
EXIT
```

- Use **CRSR** keys to select to import a pattern then press **RETURN** key.
- Press **RETURN** key and continue to read the section for your media choice below:

Disk:
- Use **CRSR** keys to select *Disk* as media source and then press **RETURN** key.
- Select a file in the directory list.
  (If the disk you have inserted does not contain any pattern files you are notified with the *No files* messagebox.)
- Press **RETURN** key to start loading.
- When done loading, press ← key to return to the main screen.

Tape:
- Use the **CRSR** keys to select *Tape* as media source and press **RETURN** key.
- A dialog asks you to press PLAY on your tape recorder and then press **SPACE** key to start loading. The tape motor is now unlocked for you to first rewind or forward the tape to the correct position.
- Press **SPACE** key to start loading and the screen goes blank.
- When a pattern file (*.PAT*) is found the screen color turns green and the file continues to load. If a different file type is found the operation is halted.
- When loading is done press ← key to return to the main screen.
- You can break the load operation anytime during the load process by pressing the **RUN/STOP** key.
  However, this opens the initialize screen asking you to clear the memory. Read more about it in the *Open Project* section.

SDR:
- Use **CRSR** keys to select *SDR* as media source and then press **RETURN** key.
- Press **SPACE** key when you are asked to start your SDR device.
- Start playing back data on your SDR device. Screen flashes as data is received.
- When done loading, press ← key to return to the main screen.
- If a file is found with a different file type type, loading stops and you are notified.

Export Patch

You can export a patch including all the sound parameters onto disk, tape or SDR.

To export a patch:

- Select *Export* in the *FILE* menu.
- Use **CRSR** keys to select to export a patch then press **RETURN** key.

The patch that is exported is the selected one in the main screen.
- Continue to read the section for your media choice below:

Disk:
- Use **CRSR** keys to select *Disk* as media source and then press **RETURN** key.
- Enter a non-existing filename in the filename dialog. You can use all letters from *a-z* and *0-9* as well as additional characters. Use **INST/DEL** key with or without the **LEFT SHIFT** key to insert/delete text.
- Press **RETURN** key to start saving or ← to cancel.
- When done saving, press ← key to return to the main screen.
- If the disk you have inserted already contains a patch file with the same name the drive light flashes and you are notified with a Save Error messagebox.

Tape:
- User **CRSR** keys to select *Tape* as media source and press **RETURN** key.
- Enter a filename in the dialog and press **RETURN** when ready or ← to cancel.
- A dialog asks you to press REC+PLAY on your tape recorder and then press **SPACE** key to start the save. The tape motor is now unlocked for you to first rewind or forward the tape to the correct position.
- Press **SPACE** key to start saving.
- Screen goes blank while saving.
- When saving is done press ← key to return to the main screen.
- You can break the save operation anytime during saving by pressing the **RUN/STOP** key.

SDR:
- Use **CRSR** keys to select *SDR* as media source and then press **RETURN** key.
- Enter a filename in the dialog and press **RETURN** when ready.
- Select the SDR speed.
- Now make your digital device ready (start recording).
- Press **SPACE** key.
- Screen goes blank and flashes as data is transmitted.
- When saving is done press ← key to return to the main screen.
- You can break the save operation anytime during saving by pressing the **RUN/STOP** key.

Import Patch

An exported patch can be imported back into any of the eight patches in the Mono Synthesizer. The current patch selected on the main screen is used as destination when importing.

To import a patch:

- Select *Import* in the *FILE* menu.
- Use **CRSR** keys to select to import a patch then press **RETURN** key.
- Press **RETURN** key and continue to read the section for your media choice below:

Disk:
- Use **CRSR** keys to select *Disk* as media source and then press **RETURN** key.
- Select a file in the directory list.
  (If the disk you have inserted does not contain any patches you are notified with the *No files* messagebox.)
- Press **RETURN** key to start loading or ← to cancel.
- When done loading, press ← key to return to the main screen.

Tape:
- Use the **CRSR** keys to select *Tape* as media source and press **RETURN** key.
- A dialog asks you to press PLAY on your tape recorder and then press **SPACE** key to start loading. The tape motor is now unlocked for you to first rewind or forward the tape to the correct position.
- Press **SPACE** key to start loading and the screen goes blank.
- When a patch file (.*PCH*) is found the screen color turns green and the file continues to load. If a different file type is found the operation is halted.
- When loading is done press ← key to return to the main screen.
- You can break the load operation anytime during the load process by pressing the **RUN/STOP** key.
  However, this opens the initialize screen asking you to clear the memory. Read more about it in the *Open Project* section.

SDR:
- Use **CRSR** keys to select *SDR* as media source and then press **RETURN** key.
- Press **SPACE** key.
- Start playing back data on your digital device.
- When done loading, press ← key to return to the main screen.
- If a file is found with a different file type, loading stops and you are notified.

Appendix

Example Guide to Editing Patterns

For beginners, the concept of pattern editing might be a bit confusing at first.
A neat help on the way to master the skills of 303 pattern editing is real world examples:

- Example 1 – Michael Jackson, "Thriller"

The first example uses the classic bassline that is repeated throughout the 1982 Michael Jackson hit song "Thriller". The musical score looks something like this:

Translated to Prophet64 pitches and time lines it looks like this:

-C# MINOR, sixteen steps-

Pitches:
B C# E F# C# C# C#
Time line:
ON-OFF-ON-OFF-ON-OFF-ON-OFF-ON-OFF-PAUSE-ON-PAUSE-PAUSE-PAUSE-ON

The first and sixth notes are played in the lowest octave.

- Select an empty pattern with **1 - 8** keys.
- Enter Pitch Mode with the **F1** key.
- Enter all the notes with the following keys: **U 2 E 5 2 2**
- Enter the octaves: Press **F1** key once to rewind pitch mode counter, press and hold the **RETURN** key and then press the **+** key
- Tap (**RETURN** key) forward to the sixth one, hold the tap button and press **+** key.

The notes are now entered. Move on to the time line:

- Enter Time Mode with **F3** key.
- Enter timing values with keys: **+ - + - + - + - + - £ + £ £ £ +**
  This corresponds to the time line of ons, offs and pauses that we picked out from the score earlier.

Hit **RUN/STOP** key or, if synced externally, start the master sequencer and listen to the result.

- Example 2 – "Billie Jean"

-F# minor, sixteen steps-

<u>Pitches:</u>
F# C# E F# E C# B C#
<u>Time line:</u>

ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-

Follow the procedure from example 1 but use these keys instead:

PITCH: **5 2 E 5 E 2 B**--+ **2**
TIME: **+ - + - + - + - + - + - + - + -**

(**B**--+ means that **B** and **+** are pressed at the same time)

Key Map

A full overview of keys used in the Prophet64 Mono Synthesizer

General Keys:

RUN/STOP	Start/stop playing
SPACE	Manually blank the screen
F1	Pitch mode
F3	Time mode
F5	Transpose mode
F7	Normal mode
CTRL	Setup menu
CRSR keys	Move General Control cursor
COMMODORE (C=)	Alter General Control values
RETURN	Tap (test tone)
←	Pattern clear

Tone Controls

Env mod

Q	Fil Env
W	Freq A / B
E	Pulse Width A / B

LFO

A	Frequency
S	Waveform
Z	Amount
X	Frequency A / B
C	Pulse Width A / B
D	Filter Frequency
F	Key Trig

Oscillator A

R	Waveforms
T	Frequency
Y	Pulse Width
U	Osc Sync / Ring Modulation
I	Oscillator On / Off

Oscillator B

G	Frequency
H	Fine Tune
J	Oscillator On / Off
V	Waveforms
B	Pulse Width

<u>Mixer</u>

N	Balance
M	Volume

<u>Filter</u>

O	External Filter Input
P	Filter Type
@	Frequency
*****	Resonance
↑	Envelope Amount
L	Attack
:	Decay
;	Sustain
=	Release

<u>Amplifier</u>

,	Attack
.	Decay
/	Sustain
RIGHT SHIFT	Release

Pitch Mode

F1	Reset step counter (restart editing)
F7	Normal mode
RETURN	"Tap", one step forward / edit current
INST/DEL	One step backward
Q2W3ER5T6Y7UI	Note keys
+	Toggle -1 octave (down)
-	Toggle +1 octave (up)
£	Toggle +2 octaves
CLR/HOME	Toggle slide

Time Mode:

F3	Reset step counter (restart editing)
F7	Normal mode
RETURN	"Tap", one step forward
+	Note on
-	Note off
£	Pause

Note: These keys are for US/English keyboards.