

Virtuoso 1.01 HELP

S D G H J
Z X C V B N M

2 3 5 6 7 8 0
Q W E R T Y U I O P

F1/F2/F3

Play Start / Pos. / Pattern

F4/F5/F6

Jam in Mono / Poly / Layered

F7/F8

Disc-menu / Set song values

←

Return to last edit mode

=

Cycle multi-frame playback

Ctrl

Cycle edit modes

Return

Edit value / Set gate on/off

Space

Set play pos. / Jam: Channel

:/;

Select instrument / Song

@/*

Select octave / Song speed

Run/Stop

Test instr. / Jam: Presets

↑/Pi

Pitch instr. / Jam: Arp. type

Cursor

Jam: Arpeggio speed

C=++/-

Set pattern length

C=+C/V

Mark selection / Copy/paste

C=+BNM

Toggle channel on/off

Return: Exit help

Space: Next page

MAIN EDITOR

The main editor has 4 edit modes:

- ✓ Sequencer
- ✓ Patterns
- ✓ Step & LFO programs
- ✓ Instruments

You can easily cycle through the 4 modes by pressing **(Shift) Ctrl**. To edit the value under your cursor, press **Return**.

Alternatively you can press **F8** to edit your song, or you can try your fresh sounds in the 3 jam modes. Press **F4** for mono, **F5** for poly & **F6** for layered mode.

To return to the main editor, press **←**.

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SEQUENCER

In the sequencer you'll be building your songs. Each sequence channel consists of patterns (\$00 - \$4F) and a handful of commands to control the song & patterns:

| key | step | command |
|--------|-------|---------------------------------|
| U | +0 | Transpose ptrn up (0-F) |
| D | -0 | Transpose ptrn down (0-F) |
| R | R0 | Repeat pattern (0-D) |
| L | Lp 00 | Loop to sequence position |
| S | .. | Stop sequence |
| Spc | | Set play position for F2 |
| Sh+Spc | | Set play pos all channels |
| C+=Spc | | Set start position song |
| CR | | Edit pattern under cursor |
| Sh+CR | | Edit ptrns all channels |
| ,/. | | Move cursor 16 steps |

PATTERNS

Each pattern-length can be set by pressing **C=** with **+/-**. By default the song-speed is used for patterns, but you can override it with speed programs.

| P01 | L64 | - Pattern no. / length | | |
|-----|-----|------------------------|----------|-------------------------------|
|] | . | . |] | |
|] | 01 | . | . |]- Instrument |
|] | . | . | . |] |
|] | . | C-0 | . |]- Note / Octave |
|] | . | --- | . |]- Gate-off |
|] | . | +++ | . |]- Gate-on |
|] | . | . | . |] |
|] | . | . | G |]- Glide type / Step programs |
|] | . | . | . | Inverted indicates an |
|] | . | . | . | active step program |
|] | . | . | .00] | - Glide amplitude (\$00-\$5F) |

PATTERNS

| type | key | command |
|------|-------|----------------------------|
| | ,/. | Cycle channels |
| inst | 0-F | Set instrument |
| inst | CR | Edit instrument |
| note | QWERT | Set note |
| note | Space | Clear note & instrument |
| note | CR | Set gate-off |
| note | Sh+CR | Set gate-on |
| prg | U/D | Glide up / down |
| prg | G | Glide to current note |
| prg | T | Tie note |
| prg | 0-F | Set glide amplitude |
| prg | Space | Clear glide or tie |
| prg | Sh+Sp | Clear all step programs |
| prg | CR | Open step programs window |
| step | CR | Jump and edit step program |
| step | ← | Close step programs window |

INSTRUMENTS

Use **:** and **;** to cycle through the instruments. You can edit any of the 7 program pointers by pressing **Return**. To edit the instrument name, press **Return** on the instrument number.

Once you've entered an instrument program you can press **Ctrl** to go back to the main instrument, or press **Return** to unlock program editing, so you can move to another instrument program

Press **Run/Stop** to test your instrument.

In the next chapter, you can read an in-depth explanation of the 8 available programs (incl. speed table).

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INSTRUMENT PROGRAMS

To edit any of the instrument programs press **Return**; the cursor gets locked for editing, you'll now be able to move inside the program. The first 6 programs are controlled by a command/value pair.

Every command/value pair is executed each frame, the exceptions to this rule are **AD**, **LP**, **AM** and filter type inits. These will jump to the next step in the same frame, you've been warned!

Basically a command is placed by typing the first letter of the command.

Return on a loop value will jump the cursor to the respective value.

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INSTRUMENT PROGRAMS

| prg | key | values | info |
|------|------|--------|----------------------|
| | ,/. | | Move cursor 16 steps |
| ADSR | AD | 00-FF | Attack/decay |
| | Sr | 00-FF | Sustain/release |
| | Wt | 00-FF | Wait xx frames |
| | Lp | 01-FF | Loop to step xx |
| | Halt | | End prg execution |
| Glis | Am | 00-5F | LF0 amplitude |
| | Up | 00-7F | # Frames LF0 up |
| | Dw | 00-7F | # Frames LF0 down |
| | Lp | 01-FF | Loop to step xx |
| | Halt | | End prg execution |
| Wave | -- | -0sc- | Oscillator value |
| | Wt | 00-FF | Wait xx frames |
| | Lp | 01-FF | Loop to step xx |
| | Halt | | End prg execution |
| Freq | -- | 00-5F | Relative up |

INSTRUMENT PROGRAMS

| prg | key | values | info |
|------|--------------|---------|--|
| Freq | -- | 7F-60 | Relative down |
| | -- | 80-DF | Absolute note |
| | F t | 01-5F | Finetune up |
| | | FF-A0 | Finetune down |
| | W t | 00-FF | Wait xx frames |
| | L p | 01-FF | Loop to step xx |
| | H alt | | End prg execution |
| Puls | - | 000-FFF | 12 Bit pulsewidth |
| | A m | 00-5F | Modulation amplitude |
| | U p | 00-7F | # Frames mod. up |
| | D w | 00-7F | # Frames mod. down |
| | L p | 01-FF | Loop to step xx |
| | H alt | | End prg execution |
| Filt | - | XYZ | X: Filter type bits Y: Resonance Z: Channel bits |

INSTRUMENT PROGRAMS

| prg | key | values | info |
|-------|------|-----------|---|
| Filt | -- | 00-FF | Filter cut-off |
| | Am | 00-FF | LF0 amplitude |
| | Up | 00-7F | # Frames LF0 up |
| | Dw | 00-7F | # Frames LF0 down |
| | Vo | 00-0F | Volume value |
| | | | (Volume LF0 settings work as well) |
| | Lp | 01-FF | Loop to step xx |
| | Halt | | End prg execution |
| Hard | 1st | 00-FF | 1st frame oscillator after hard restart |
| | | 0000 FFFF | ADSR value of hard-restart |
| Speed | | 02-7F | # Frames per pattern step |
| | | 80-FF | Loop to step xx-\$80 |

PLAYER BEHAVIOUR

Some notes about the player and do's and don'ts during editing.

As you may have noticed, there's no vibrato per instrument. You'll have to craft your vibrato with the glissando program. Tip: Up02, Dw03, Up01

The glissando and pulsewidth modulations are logarithmic, which means high amplitude values are extremely expressive and low values are very gentle. It's up to you to explore the opposites.

Hard restart is always 2 frames. The 2 frames delay is also used for instruments without hard restart.

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PLAYER BEHAVIOUR

Filters are editable in 8-bit depth, but the lowest 3 bits of the hi value are inverted and set to the low value of the SID filter register. Thus a value of \$03 translates to \$034. This may come in handy for 8580 geeks.

The speed program can be used to create complex and swinging/funk rhythms for each pattern.

Don't use seperate instruments for chords, point to the right frequency program using the pattern command.

Use the volume command with LFO to fade your music in or out.

Virtuoso Player

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PLAYER BEHAVIOUR

The glissando program is also used for pattern glide commands, so it's not possible to use both at the same time. If you'd like to have a gliding vibrato you can point to a program such as: Am20, Up02, Dw04, Loop to Am20.

A pattern command pointer has a higher priority than an instrument program pointer.

Using a command other than Loop or Halt on position \$FF will result in strange player behaviour. The programs do not wrap around.

A finetune of \$30 is a half-note up.

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PLAYER BEHAVIOUR

During multi-frame playback, only the instrument programs run at the selected number of frames. The hard restart timer and speed values are decreased only on the first frame of playback.

A tie note does not reset the glissando pointer of an instrument. This is different compared to vibrato in Goattracker. You have to reset the glissando pointer manually with a pattern command.

In order to have a gliding frequency program, for example when your last value is \$0C, you'll have to loop it to that value, as if it were an arpeggio.

JAM MODES

There are 3 jam modes available:

| | |
|-----------|---------|
| F4 | Mono |
| F5 | Poly |
| F6 | Layered |

Mono and poly modes will use the song settings of your current song, layered mode uses it's own multi-frame settings per preset.

Press **Space** to cycle through channels. Poly mode does this automatically to find a free channel to play a note.

You can use **:/;** to select an instrument and **@/*** to select octave in all 3 modes.

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JAM MODES

You can, just like the editor, change multi-frame playback by pressing **=**.

In layered mode, use **Run/Stop** to select your preset. Cycle to the right layer with **Space** and update the instrument and octave of that layer to build sounds.

Your layered presets are included in a project file when you save it.

Arpeggiator

Use **↑/Pi** to select arpeggio shape and **Cursor** keys to change arpeggio speed.

Glissando

Use **Inst/Del** to change glissando speed.

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SONG EDITING

Virtuoso gives you the option to write multiple songs in one project. All songs use the same sequencer, just with different start positions.

Each song does have it's own default speed and multi-frame setting.


To set the 3 start positions of the current song, press **C+=Space** on the desired sequencer step.

To edit other song settings, press **F8**, you're now in song edit mode.

Use **:/;** to select song, **@/*** to select song speed and **=** for multi-frames.

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DISC MENU

- F1 Load project
- F2 Init new project
- F3 Save project
- F4 Load instruments
- F5 Export songs
- F6 Save instruments
- F7 Load help
- F8 Toggle drive no. 8/8
-  Exit to editor

Loading and saving use kernal LOAD/SAVE functions, so they also work with most cartridge speeders.

Exporting songs doesn't use kernal SAVE, it's slow, also with cartridges, because it hooks into CHROUT.

DISC MENU

When saving a project, consider this:
The highest pattern in your sequencer is also the highest pattern that's saved.

Loaded & saved instruments files contain all instruments and layered presets.

Exported songs have a maximum size of \$3000, it should be enough. There are no ways to shrink the player for your needs by disabling functions. Also, patterns that are not used in the sequencer will still be exported, unless they've a higher pattern number than the highest used in the sequencer. Removing unused patterns may become a feature in future updates.

Virtuoso Disc menu

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Creating Virtuoso was a big puzzle ad-
venture. I hope I'll continue to feel
the urge to improve it with small up-
dates. Unfortunately there's close to 0
memory left, so adding new features is
most likely not going to happen. I can
send you the source-code though. :)

Cheers, Hein

