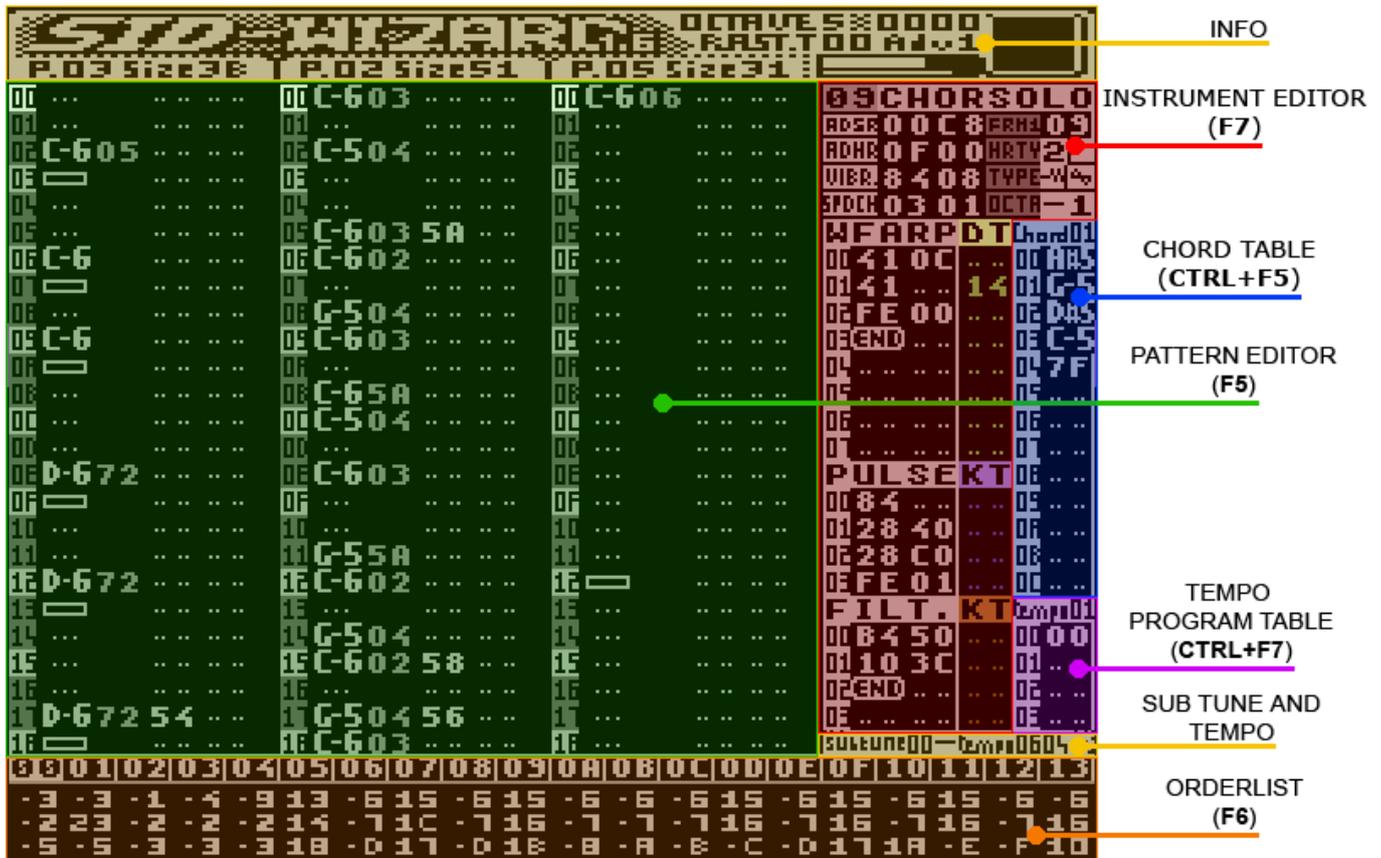


Charts and Tables for

SID-WIZARD

VERSION 1.6

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INFO AREA

The info area contains the logo, information about selected patterns, jamming octave, raster time, playback time, auto-advance mode / amount, pulse width meter, filter cut-off frequency meter and oscilloscope.

PATTERN EDITOR

SHORTCUT KEY: F5

This is where you write the actual music. You can edit three different patterns at one time, one for each of the three channels of the SID chip.

ORDER LIST

SHORTCUT KEY: F6

This is where you control the whole arrangement of your tune, i.e. the order of the patterns etc.

INSTRUMENT EDITOR

SHORTCUT KEY: F7

Here you create the instruments for your tunes. This area consists of four sections; the

main area, waveforms-arpeggio table (WFARP), pulse table (PULSE) and filter table (FILT.)

CHORD TABLE

SHORTCUT KEY: C+=F5 (CTRL+F5)

In this table you can edit and store chords, you can choose which chord is default for an instrument, the chord used can be changed in the pattern editor. Storing the chords separately from the instruments gives you more flexibility (you don't have to create different instruments for different chords).

TEMPO-PROGRAM TABLE

SHORTCUT KEY: C+=F7 (CTRL+F7)

This table is only used if you need complex tempos, see the section about tempos for more information.

SUBTUNE AND TEMPO

This area shows the active sub tune and the default tune-tempo / funktempo.

WF-COLUMN

\$00..\$0F	Repeat only arpeggio/detune-columns for 1..16 frames (no Waveform-change).
\$10..\$FD	Simple WAVEFORM/CONTROL register value setting.
\$FE	Jump to a table-position (position in 2nd (ARP) column, if $\geq \$40$, it jumps to itself).
\$FF	End of the table, table execution ends here. This value can't be typed, it's shown as END at end of table.

WAVEFORM / CONTROL FIRST NIBBLE

The first nibble of this value sets the waveform (or combination of waveforms). To combine waveforms, you add the value for one waveform to the other, so to combine Saw tooth and Pulse, the value would be $\$2 + \$4 = \$6$. Remember that that noise waveform can't be combined with other waveforms. The values for the waveforms are:

\$1	TRIANGLE
\$2	SAW TOOTH
\$4	PULSE
	For the pulse waveform to be audible you need to insert at least one row in the PULSE table to set the pulse width.
\$8	NOISE

WAVEFORM / CONTROL SECOND NIBBLE

The second nibble (control register) sets different options for the waveform. These values can again be combined by adding the ones you want together, so to put gate on (like you would normally do) and enable ring modulation, the result would be $\$1 + \$4 = \$5$.

\$1	GATE ON
	The gate needs to be on for the waveform to be heard.
\$2	SYNC

To produce "Hard Sync" effects, explained in the introduction.

\$4 RING MODULATION

This is explained in the introduction.

\$8 TEST

This resets and lock the oscillator at zero until this value is cleared.

ARP-COLUMN

\$00 Zero pitch-shifting (prime, '0' interval) - regain original note-pitch

\$01..\$5F Relative pitch-shift upwards in halftones (positive interval)

\$7F Jump to default or pattern-FX set Chord.

Depending on the chord, the execution of the waveform table may continue after the chord. With this command you can also override the default chord speed by setting the speed value in the (WF) column (values can be \$00..\$0F). If you do this, you should leave the default chord speed setting to \$00.

\$80 No process (useful when don't want to touch pitch and detune, just waveform).

\$81..\$DF Set absolute pitch (frequencies are identical to C-1..A-8 notes, see table in the end of this manual).

\$FF..\$EO Relative pitch-shift downwards in negative direction (negative interval).

DT-COLUMN (DETUNE)

\$00..\$FE Set fine-detuning amount. The higher the value the sharper the pitch will be.

\$FF No process in detune-table (the previously set detune-value is retained).

PULSE WIDTH AND FILTER TABLES

PULSE WIDTH TABLE

\$8x..\$Fx xx set pulse-waveform's pulse width hi-nibble and low-byte. A value of \$000 or \$FFF will produce a constant DC output (silent), a value of \$800 will produce a square wave. The value of the first nibble doesn't affect the pulse width, but it has to be \$8..\$F.

\$00..\$7F xx Adds / subtracts signed xx (0...\$7F / \$80...\$ff) to the pulse width 0-127 (\$00-7F) times, in other words, this will animate the pulse width. Use '=' key to negate a positive value or see the conversion table in the end of this manual for signed decimal values (-128 - 127).

\$FE Jump to a position in the table (position in 2nd column, can jump to itself)

\$FF End of the table, table execution ends here. This value can't be typed, it's show as END at end of table.

FILTER TABLE

\$8r..\$Fr xx The first nibble sets the filter band, the possible values are \$8 => filter deactivated, \$9 => low-pass, \$B => low-pass + band pass, \$C => high-pass, \$D => low-pass + high pass, \$E => band-pass + high-pass, \$F => all modes together.

The second nibble (r) sets the resonance, this can be any value from \$0 to \$F, \$F giving the strongest resonance of course. If band is set to \$F (all modes together) then r can't be set to \$F (this is due to the reserved end of table value \$FF).

The third and fourth nibbles (xx) sets the cut-off frequency. Valid values are \$00 - \$FF. The approximate cut-off frequency ranges between 30Hz and 10KHz.

\$00..\$7F xx Adds / subtracts signed xx (0...\$7F / \$80...\$ff) to the cut-off frequency 0-127 (\$00-7F) times, in other words, this will generate a filter sweep. Use '=' key to negate a positive value or see the conversion table in the end of this manual for signed decimal values (-128 - 127).

\$FE Jump to a position in the table (position in 2nd column, can jump to itself)

\$FF End of the table, table execution ends here. This value can't be typed; it's shown as END at end of table.

PATTERN EDITOR

NOTE-COLUMN EFFECTS

Note	2 3 5 6 7 9 0 Q W E R T Y U I O P (Upper octave)
	S D G H J L Z X C V B N M , . (Lower octave)
Note OFF	RETURN
Ring Modulation ON	SHIFT + R
Ring Modulation OFF	C= + R (CTRL + R)
Auto-portamento	SHIFT + P
Sync ON	SHIFT + S
Sync OFF	C= + S (CTRL + S)

INSTRUMENT-COLUMN EFFECTS

\$01..\$3E	Select an instrument for the current note, which stays selected until another instrument is selected with this command. This also resets the tables which restart was switched off with C=+P (CTRL+P) or C=+F (CTRL+F).
\$3F	Tied note (true legato, the instrument doesn't restart just note-pitch changes)
\$40..\$4F	Waveform (reg.4) nibble adjusting - any subsequent WF-table waveform change overrides it.
\$50..\$5F	Sustain nibble adjusting of ADSR (Small-FX)
\$60..\$6F	Release (reg.6) nibble adjusting of ADSR (Small-FX)
\$70..\$7F	Select Chord (overriding the default) for the instrument. (No need to create an instrument for every chord. Instead, create an instrument, call chord-table with \$7F from ARP-table, then select the chord with this pattern-FX.)

EFFECT-COLUMN SMALL EFFECTS

The Small effects' 1st nibble is their type of operation, the 2nd nibble is the corresponding effect-value / amount. Unless you are using the 'extra' player version, only one Small-FX ADSR setting is allowed per note.

\$20..\$2F	Attack nibble adjusting of ADSR (Small-FX)
\$30..\$3F	Decay nibble adjusting of ADSR (Small-FX)
\$40..\$4F	Waveform (reg.4) nibble adjusting - any subsequent WF-table waveform change overrides it.
\$50..\$5F	Sustain nibble adjusting of ADSR (Small-FX)
\$60..\$6F	Release (SID reg.6) nibble adjusting of ADSR (Small-FX)
\$70..\$7F	Select Chord (overriding the default) for the instrument. (No need to create an instrument for every chord. Instead, create an instrument, call a chord with \$7f from ARP-table, then select chord.)
\$80..\$8F	Vibrato Amplitude adjustment - The frequency stays intact.
\$90..\$9F	Vibrato Frequency adjustment - Amplitude stays intact.
\$A0..\$AF	Adjust Main volume (low nibble of \$d418)
\$B0..\$BF	Filter Band (LOW/MID/HI/3OFF) (Filter band can be overwritten with filter-table execution)
\$C0..\$CF	Chord-speed adjustment (arpeggio-speed in case of explicit arpeggio)
\$D0..\$DF	Detune current note with given amount
\$E0..\$EF	Enable/disable Test-bit/Ring-bit/Sync-bit/Gate-bit (Waveform-table can override)
\$F0..\$FF	Filter Resonance (strength) nibble setting (Subsequent filter-table command can override it.)

PATTERN EDITOR (CONTINUED)

EFFECT-COLUMN BIG EFFECTS

The Big effects has their effect-type in effect-column and their 1 byte (\$0..\$FF or -\$7f..+\$80) value is in the last column of a pattern. (\$4...\$7 effects are identical to Small effect-types of the same range to aid human memorization.)

\$01	Pitch Slide UP (same FX-number as Goattracker's)
\$02	Pitch Slide DOWN (same FX-number as Goattracker's)
\$03	Tone-portamento (with given speed) (same FX-number as Goattracker's)
\$04	Waveform-Control (\$d404, etc.) register setting (or above \$f0: goes to WF-ARP table-position)
\$05	ATTACK/DECAY (SID-register 5) byte adjustment
\$06	SUSTAIN/RELEASE (SID-register 6) byte adjustment
\$07	Select Chord (overriding the default) for the instrument.
\$08	Vibrato amplitude and frequency adjustment (overrides instrument's default vibrato)
\$09	Select vibrato-type (possible values: \$00, \$10, \$20, \$30)
\$0A	Adjust Pulse width program table-index for current instrument (go to table-position)
\$0B	Branch to Filter-program table-index for the current instrument
\$0C	Chord-speed adjustment (arpeggio-speed in case of explicit arpeggio)
\$0D	Detune current note with given amount
\$0E	Simple pulse width setting for pulse-waveform (instr.PW-table changes can override it)
\$0F	Filter-cutoff frequency hi-byte shift (added to filter frequency). Now notes don't reset it!

\$10	Set Main (sub tune's basic) single-tempo
\$11	Set Main (sub tune's) funktempo . 1st (even rows) and 2nd (odd rows) tempo, in left/right nibbles.
\$12	Set Main tempo-program for whole sub tune (any speeds can be given for each rows)
\$13	Set track's individual single-tempo
\$14	Set the track's funktempo (even and odd rows' in left/right nibbles)
\$15	Set the track's individual tempo-program
\$16	Select vibrato-type (possible values: \$00, \$10, \$20, \$30)
\$1C	Shift cutoff hi-byte (permanent)
\$1D	Delay track by \$00..\$ff (20ms) frames
\$1E	Delay only the current note by \$00..\$ff frames.
\$1F	Set value of filterswitch / resonance register of SID (including bit for external source's filter)

TEMPO -> BPM FORMULA

PAL MACHINE

$BPM = (17734475 * 60) / (312 * 63 * 18 * \text{song tempo} * \text{lines per beat})$

$BPM \approx 3007.4744 / (\text{song tempo} * \text{lines per beat})$

NTSC MACHINE

$BPM = (14318180 * 60) / (263 * 65 * 14 * \text{song tempo} * \text{lines per beat})$

$BPM \approx 3589.5659 / (\text{song tempo} * \text{lines per beat})$

(See also the tempo tables at the end)

GENERAL PURPOSE AND GLOBALLY USABLE KEYS

Keys on C64	US int. Keys in VICE emulator	Category	Functions of the pressed keys
F5	F5	Navigation	Go to Pattern-editor window.
Shift+F5	F6	Navigation	Go to Orderlist .
F7	F7	Navigation	Go to Instrument-editor panel.
C= + F5	CTRL+F5 or F6	Navigation	Go to Chord-table .
C= + F7	CTRL+F7 or F8	Navigation	Go to Tempoprogram-table .
Shift+F7	F8	Navigation	Go to Main Menu .
CURSOR-down/right and Shift	Cursor up/down/left/right	Navigation	Move cursor step-by-step up/down/left/right where possible.
CONTROL or Shift+CONTROL	TAB or Shift+TAB	Navigation	Cycle through tracks or instrument-tables.
/ or Shift+/, UP-arrow* or RESTORE	/ or Shift+ / , Page-Down*/Page-Up	Navigation	Move cursor in 4 or 8 steps up/down /left/right depending on window (pattern/orderlist/etc.)
HOME	Home	Navigation	Move cursor to start-position on screen, then absolute start-position in table/pattern.
RETURN	Enter	Navigation	Car return to beginning of row, or go to pattern(s), instrument or chord under cursor.
F1 or C= + F1	F1 or CTRL+F1	Playback	Play the tune from start / follow-play tune from start.
Shift+F1 or C=+Shift+F1	F2 or CTRL+F2	Playback	Play the tune from marker position(s) / follow-play tune from marker position(s).
F3 or C= + F3	F3 or CTRL+F3	Playback	Play the selected patterns / follow-play the selected patterns.
Shift + F3 or STOP	F4 or ESC	Playback	Toggle pause/continue the playback of tune/patterns.
Shift + SPACE	Shift + SPACE	Playback	Play the selected patterns from cursor-position.
Left-Arrow	` (above TAB)	Playback	Fast-forward play (4x the speed of normal)
Shift + Left-Arrow C= + Left-Arrow	Shift + ` (above TAB) Control + `	Playback, Setting	Toggle follow-play mode / normal playback . Set follow-play mode as default on/off.
Shift + 1...6	Shift + 1...6	Play./Setting	Toggle Mute / Unmute on channels 1..3 (1...6 with two SID chips)
Shift + 0	Shift + 0	Play./Setting	Solo / Unsolo active track
Shift + A/Z	Shift + A/Z	Setting	Increase/Decrease auto-advance (stepping) amount after typing notes.
Shift + I	Shift + I	Setting	Toggle instrument auto-typing with notes.
Shift + D	Shift + D	Setting	Toggle dovetailing .
C= + D	CTRL + D	Setting	Toggle MIDI monophonic+legato or polyphonic jamming mode .
Shift + F/G	Shift + F/G	Setting	Decrease/increase framespeed (1x singlespeed...8x multispeed).
Shift + H/J	Shift+H/J	Setting	Decrease/increase step-highlighting aid frequency in pattern-editor window.
C= + B	CTRL + B	Setting	Toggle pattern/ track-binding on/off . Patterns can be scrolled together/independently.
C= + T	CTRL + T	Setting	Toggle global normal tempo / funktempo mode for subtune.
< or >, Shift + , / . Shift + : or ;	Shift + comma / dot Shift + ; or '	Setting	Increase/decrease global normal tempo / 2nd funktempo for sub tune.
PLUS / MINUS	PLUS / MINUS	Selection	Select instrument or select chord / tempo in chord/tempo tables.
C= + , / .	CTRL + comma / dot	Selection	Select sub tune (Orderlist). Patterns are shared between sub tunes.
C= + 1...8	CTRL + 1...8	Selection	Select octave 1..8 to edit or jam musical notes. (In 'DMC' mode no need for C=)
C= + PLUS/MINUS	CTRL + +/-	Selection	Octave up / down
Shift+PLUS or Shift+MINUS	Shift+PLUS or Shift+MINUS	Selection	Select instrument for jamming / editing or select pattern for editing in pattern window.
Shift + T/Y	Shift + T/Y	Selection	Select (decrease/increase number of) tempo-program .
Shift + K/L	Shift + K/L	Selection	Select (decrease/increase number of) Chord to edit.
SPACE	SPACE	Editing	Toggle Keyboard note-jamming or note-editing in pattern-editor window.
Shift + N	Shift + N	Editing	Rename selected instrument . Max. 8 characters, Esc/Stop aborts the renaming.
DEL/Pound or Shift+DEL	Delete/Backspace or Insert	Editing	Delete/insert in cursor position or increase/decrease pattern/table size in end-positions.

*In Linux the VICE build seems to have up-arrow key associated to Page-Down, while the default would be 'Del'-key (which is good, because therefore in Linux the Page-Down (up-arrow) is in correct place, below Page-Up, which is associated to Restore C64 key.) In Linux the 'Del'-key works as Backspace which is better selection IMO.

*Note that in follow-play modes the pattern-editor keys are inactive to prevent accidental editing while playing the tune.

PATTERN EDITOR RELATED KEYS

Keys on C64	US int. Keys in VICE emulator	Category	Functions of pressed keys
CONTROL or Shift+CONTROL	TAB or Shift+TAB	Navigation	Cycle through tracks forward/backward.
C= + CONTROL	CTRL + TAB		Fast switch SID1 / SID2
RETURN or Shift+RETURN	Enter or Shift+Enter	Navigation	Go to next row, place Note-on/off , or select instrument/chord under cursor.
Shift + Space	Shift + Space	Edit/jam	Play pattern from cursor.
Z X C V B N M , . (A...L in DMC mode)	Z X C V B N M , . (A...L in DMC mode)	Edit/Jam	Lower octave white piano-keys (C major diatonic whole-tones). Legato jamming possible.
Q,W,E,R,T,Y,U,I,O,P (not in DMC mode)	Q,W,E,R,T,Y,U,I,O,P (not in DMC mode)	Edit/Jam	Upper octave white piano-keys (C major diatonic scale whole-tones).
S,D, G,H,J, L , 2,3, 5,6,7, 9,0 (non-DMC)	S,D, G,H,J, L , 2,3, 5,6,7, 9,0 (non-DMC)	Edit/Jam	Lower and upper octave black piano keys (halftones). In DMC-mode it's in QWERTY row!
C= + 1...8 (1...8 in DMC-mode)	CTRL + 1...8 (1...8 in DMC-mode)	Edit/Jam	Select octave 1...8 where editing or jamming musical notes happens.
C= + RETURN	CTRL + Enter	Editing	Select played patterns.
Shift + +/-	Shift + +/-	Editing	Select pattern on track
A, 1, C=+Del (Q in 'DMC' mode)	A, 1, Cotrol+Del (Q in 'DMC' mode)	Editing	Empty-note (Delete note in note-column pattern-position without moving the rest.)
1...9, A...F hexa keys	1...9, A...F hexa keys	Editing	In instrument/effect columns type value , in note-column set note or vibrato-amplitude .
DEL/Pound or Shift+DEL	Delete/Backspace or Insert	Editing	Delete/insert in cursor position or increase/decrease pattern-size in pattern-end position.
C= + DEL	CTRL + Delete/Backspace	Editing	Delete note or instrument+effect columns in current pattern-row, depending on cursor-position.
C= + Shift + DEL	CTRL + Shift + Del./Backspace	Editing	Delete the entire pattern-row (note and instrument and effect) in the current track.
Shift + Q/W	Shift + Q/W	Editing	Transpose notes up/down by half-notes in current pattern after cursor-position.
C= + Q/W	CTRL + Q/W	Editing	Transpose notes up/down by octaves in current pattern after cursor-position.
Shift + R or C= + R	Shift + R or CTRL + R	Editing	Place ring-modulation effect on/off into note column at current cursor position.
Shift + P	Shift + P	Editing	Place auto-portamento effect into note column at current cursor position.
Shift + S or C= + S	Shift + S or CTRL + S	Editing	Place sync-bit on/off effect into note column at current cursor position.
Shift + V	Shift + V	Editing	Place vibrato -effect into note column at current cursor position. Amplitude editable.
C= + Z	CTRL + Z	Editing	Undo
C= + X	CTRL + X	Editing	Cut/delete pattern content from cursor position to end of pattern and copy to pattern-buffer/clipboard.
C= + C	CTRL + C	Editing	Copy pattern content from cursor position to end of pattern to pattern-buffer/clipboard.
Shift + C	Shift + C	Editing	Limit the range of data copied (or cut) into buffer to cursor position. Define end of buffer.
C= + V	CTRL + V	Editing	Paste pattern-buffer content from cursor position till end of pattern.

ORDERLIST RELATED KEYS

Keys on C64	US int. Keys in VICE emulator	Category	Functions of pressed keys
RETURN or Shift+RETURN	Enter or Shift+Enter	Navigation	Selects the pattern(s) under the cursor position in Orderlist and jumps to current track in Pattern-editor.
C= + RETURN	CTRL + Enter	Navigation	Selects the patterns that are currently played and jumps to current track in the Pattern-editor.
Shift+SPACE	Shift + Space	Playback	Sets Orderlist playstart-marker (for F2-playing) to cursor-position for all tracks. Position number gets inverted.
C= + SPACE	CTRL + SPACE	Playback	Sets Orderlist playstart-markers to individual played position for all tracks. Position number of 1st track gets inverted.
1...9, A...F hexa keys	1...9, A...F hexa keys	Editing	To type hexa pattern-numbers and effect/jump numbers into Orderlist sequences of tracks.
DEL/Pound or Shift+DEL	Delete/Backspace or Insert	Editing	Delete/insert in cursor position or increase/decrease Orderlist sequence-size if cursor is in sequence-end/loop position.
C= + Z	CTRL + Z	Editing	Undo
C= + C	CTRL + C	Editing	Copy orderlist-sequence from cursor to buffer.
Shift + C	Shift + C	Editing	Set the end of copied data in buffer. (limit buffer)
C= + V	CTRL + V	Editing	Paste buffer to cursor-pos ., appends existing data
C= + E	CTRL + E	Editing	Type and the first Empty (unused) pattern number . Increased if pressed more times, works on end signal.



INSTRUMENT EDITOR RELATED KEYS

Keys on C64	US int. Keys in VICE emulator	Category	Functions of pressed keys
CONTROL or Shift+CONTROL	TAB or Shift+TAB	Navigation	Cycle through main instrument-setting panel and instrument-tables.
RETURN or Shift+RETURN	Enter or Shift+Enter	Navigation	Car return' to beginning of next row in tables (or toggle/cycle some main instrument-parameters.)
Shift + S	Shift + S	Navigation	Go to main instrument settings
Shift + W	Shift + W	Navigation	Go to WF-ARP table
Shift + P	Shift + P	Navigation	Go to PUIseWidth table
+ / -	+ / -	Selection	Select instrument. The same in pattern/orderlist/instrument windows, while Shift is needed in Chord/Tempo tables.
RETURN	Enter	Selection	Toggle/cycle some of the instrument's main parameters like HR-type, Vibrato-type, octave-shift sign.. Or goes to default-chord if it's number is under the cursor.
1...9, A...F hexa keys and F..Z	1...9, A...F hexa keys	Editing	To type hexa values into instrument-data fields, or type the name of the instrument (some signals allowed too.)
=	=	Editing	Negate value (e.g. \$40 will be \$C0 = -\$40)
Shift + N	Shift + N	Editing	Rename selected instrument . Max. 8 characters, Esc/Stop aborts the renaming.
DEL/Pound or Shift+DEL	Delete/Backspace or Insert	Editing	Delete/insert in cursor position. Increases/decreases table-size.
Shift + Space	Shift+Space	Editing	Set/clear gate-off index to current table-row under the cursor (WFARP/PULSE/FILT)
C= + Z	CTRL + Z	Editing	Undo
C= + C	CTRL + C	Editing	Copy the entire selected instrument to instrument-buffer.
C= + X	CTRL + X	Editing	Cut the entire selected instrument to instrument-buffer
C= + V	CTRL + V	Editing	Paste instrument -clipboard content to the selected instrument. The entire instrument will be overwritten.
C= + P or C= + F	CTRL + P / F	Editing	Toggle pulsewidth-/filter-table reset on note-start. (Selecting instrument resets it.)

CHORD TABLE / TEMPO TABLE RELATED KEYS

Keys on C64	US int. Keys in VICE emulator	Category	Functions of pressed keys
CONTROL or Shift+CONTROL	TAB or Shift+TAB	Navigation	Go to pattern editor or go to instrument-editor.
RETURN or Shift+RETURN	Enter or Shift+Enter	Navigation	Car return' to beginning of next row in tables (or toggle/cycle some main instrument-parameters.)
+ / -	+ / -	Selection	Select chord / tempo-program. Shift+K/L or Shift+T/Y is needed in other windows.
Shift+PLUS or Shift+MINUS	Shift+PLUS or Shift+MINUS	Selection	Select instrument for jamming / editing.
C= + N	CTRL + N	Editing	Note-mode / number-mode
1...9, A...F hexa keys	1...9, A...F hexa keys	Editing	To type hexa values and chord loop/return numbers into chordtable/tempoprogram-table.
=	=	Editing	Negate value (e.g. \$04 will be \$fb -4 2s' compl.)
DEL/Pound or Shift+DEL	Delete/Backspace or Insert	Editing	Delete/insert in cursor position. Increases/decreases table-size.

FILE SELECTOR KEYS

Keys on C64	US int. Keys in VICE emulator	Functions of pressed keys
F1	F1	Re-read disk-directory
F3 / Up-arrow	F3 / Up-arrow	Page-down in directory
Control	TAB	Filename/info/selector
Return	Enter	Approve / Perform task
F7 / STOP	Escape	Quit file-dialog

SDI KEYBOARD LAYOUT DIFFERENCES AND ADD-ONS

Keys on C64	US int. Keys in VICE emulator	Functions of pressed keys
Shift + L	Shift + L	Load music (bring up MENU too)
Shift + S	Shift + S	Save Music (bring up MENU too)
F1	F1	Play from orderlist mark(s)
F2	F2	Set play-mark in orderlist
F3	F3	Stop/Continue playback
Z	Z	Play pattern from current line
Return	Enter	Play pattern from top
F4	F4	Edit/Synth mode (toggle)
F7 /F8	F7 /F8	Select octave (incr./decr.)
STOP, /	Escape, /	Toggle instrum./pattern-editor
Shift + F	Shift + F	Filter program table
Shift + T	Shift + T	Tempo program table
C= + +/-	CTRL + +/-	Next/Previous song (subtune)
C= + 1...3	CTRL + 1...3	Track on/off (mute/unmute)
S / K, L	S / K, L	Tab jump left/right (tracks)
, / .	, / .	Jump up/down 8/4 lines
Space	Space	Delete down (in pattern)
G, Shift + G	G, Shift + G	Gate on/off (--/++ in pattern)
> / <	> / <	Transpose in pattern / Chord+-
M, C= + M	M, CTRL + M	Copy, Paste (at cursor-position)
Shift + M	Shift + M	Set end of copy-mark/selection
C= + F	CTRL + F	Clear pattern (From cursorpos)
Shift + Home	Shift + Home	To start of song (orderlist)
H	H	Hunt next unused in Orderlist
N	N	Name sound/instrument
?	?	Set speed calls (framesp.1..8)

DECIMAL TO HEXADECIMAL CONVERSION TABLE

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DECIMAL TO HEXADECIMAL CONVERSION TABLE

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 (http://www.witchmastercreations.com)

UNSIG.	SIG.	HEX
0	0	00
1	1	01
2	2	02
3	3	03
4	4	04
5	5	05
6	6	06
7	7	07
8	8	08
9	9	09
10	10	0A
11	11	0B
12	12	0C
13	13	0D
14	14	0E
15	15	0F
16	16	10
17	17	11
18	18	12
19	19	13
20	20	14
21	21	15
22	22	16
23	23	17
24	24	18
25	25	19
26	26	1A
27	27	1B
28	28	1C
29	29	1D
30	30	1E
31	31	1F
32	32	20
33	33	21
34	34	22
35	35	23
36	36	24
37	37	25
38	38	26
39	39	27
40	40	28
41	41	29
42	42	2A
43	43	2B
44	44	2C
45	45	2D
46	46	2E
47	47	2F
48	48	30
49	49	31
50	50	32
51	51	33
52	52	34
53	53	35
54	54	36
55	55	37
56	56	38
57	57	39
58	58	3A
59	59	3B
60	60	3C
61	61	3D
62	62	3E
63	63	3F

UNSIG.	SIG.	HEX
64	64	40
65	65	41
66	66	42
67	67	43
68	68	44
69	69	45
70	70	46
71	71	47
72	72	48
73	73	49
74	74	4A
75	75	4B
76	76	4C
77	77	4D
78	78	4E
79	79	4F
80	80	50
81	81	51
82	82	52
83	83	53
84	84	54
85	85	55
86	86	56
87	87	57
88	88	58
89	89	59
90	90	5A
91	91	5B
92	92	5C
93	93	5D
94	94	5E
95	95	5F
96	96	60
97	97	61
98	98	62
99	99	63
100	100	64
101	101	65
102	102	66
103	103	67
104	104	68
105	105	69
106	106	6A
107	107	6B
108	108	6C
109	109	6D
110	110	6E
111	111	6F
112	112	70
113	113	71
114	114	72
115	115	73
116	116	74
117	117	75
118	118	76
119	119	77
120	120	78
121	121	79
122	122	7A
123	123	7B
124	124	7C
125	125	7D
126	126	7E
127	127	7F

UNSIG.	SIG.	HEX
128	-128	80
129	-127	81
130	-126	82
131	-125	83
132	-124	84
133	-123	85
134	-122	86
135	-121	87
136	-120	88
137	-119	89
138	-118	8A
139	-117	8B
140	-116	8C
141	-115	8D
142	-114	8E
143	-113	8F
144	-112	90
145	-111	91
146	-110	92
147	-109	93
148	-108	94
149	-107	95
150	-106	96
151	-105	97
152	-104	98
153	-103	99
154	-102	9A
155	-101	9B
156	-100	9C
157	-99	9D
158	-98	9E
159	-97	9F
160	-96	A0
161	-95	A1
162	-94	A2
163	-93	A3
164	-92	A4
165	-91	A5
166	-90	A6
167	-89	A7
168	-88	A8
169	-87	A9
170	-86	AA
171	-85	AB
172	-84	AC
173	-83	AD
174	-82	AE
175	-81	AF
176	-80	B0
177	-79	B1
178	-78	B2
179	-77	B3
180	-76	B4
181	-75	B5
182	-74	B6
183	-73	B7
184	-72	B8
185	-71	B9
186	-70	BA
187	-69	BB
188	-68	BC
189	-67	BD
190	-66	BE
191	-65	BF

UNSIG.	SIG.	HEX
192	-64	C0
193	-63	C1
194	-62	C2
195	-61	C3
196	-60	C4
197	-59	C5
198	-58	C6
199	-57	C7
200	-56	C8
201	-55	C9
202	-54	CA
203	-53	CB
204	-52	CC
205	-51	CD
206	-50	CE
207	-49	CF
208	-48	D0
209	-47	D1
210	-46	D2
211	-45	D3
212	-44	D4
213	-43	D5
214	-42	D6
215	-41	D7
216	-40	D8
217	-39	D9
218	-38	DA
219	-37	DB
220	-36	DC
221	-35	DD
222	-34	DE
223	-33	DF
224	-32	E0
225	-31	E1
226	-30	E2
227	-29	E3
228	-28	E4
229	-27	E5
230	-26	E6
231	-25	E7
232	-24	E8
233	-23	E9
234	-22	EA
235	-21	EB
236	-20	EC
237	-19	ED
238	-18	EE
239	-17	EF
240	-16	F0
241	-15	F1
242	-14	F2
243	-13	F3
244	-12	F4
245	-11	F5
246	-10	F6
247	-9	F7
248	-8	F8
249	-7	F9
250	-6	FA
251	-5	FB
252	-4	FC
253	-3	FD
254	-2	FE
255	-1	FF

EXACT NOTES FOR ARP-COLUMN

Val ue	Note						
81	C-1	99	C-3	B1	C-5	C9	C-7
82	C#	9A	C#	B2	C#	CA	C#
83	D	9B	D	B3	D	CB	D
84	Eb	9C	Eb	B4	Eb	CC	Eb
85	E	9D	E	B5	E	CD	E
86	F	9E	F	B6	F	CE	F
87	F#	9F	F#	B7	F#	CF	F#
88	G	A0	G	B8	G	D0	G
89	G#	A1	G#	B9	G#	D1	G#
8A	A	A2	A	BA	A	D2	A
8B	Bb	A3	Bb	BB	Bb	D3	Bb
8C	B	A4	B	BC	B	D4	B
8D	C-2	A5	C-4	BD	C-6	D5	C-8
8E	C#	A6	C#	BE	C#	D6	C#
8F	D	A7	D	BF	D	D7	D
90	Eb	A8	Eb	C0	Eb	D8	Eb
91	E	A9	E	C1	E	D9	E
92	F	AA	F	C2	F	DA	F
93	F#	AB	F#	C3	F#	DB	F#
94	G	AC	G	C4	G	DC	G
95	G#	AD	G#	C5	G#	DD	G#
96	A	AE	A	C6	A	DE	A
97	Bb	AF	Bb	C7	Bb	DF	Bb
98	B	BO	B	C8	B		

ATTACK / DECAY / RELEASE TIMINGS

HEX	Attack Rate	Decay / Release Rate
0	2 ms	6 ms
1	8 ms	24 ms
2	16 ms	48 ms
3	24 ms	72 ms
4	38 ms	114 ms
5	56 ms	168 ms
6	68 ms	204 ms
7	80 ms	240 ms
8	100 ms	300 ms
9	250 ms	750 ms
A	500 ms	1.5 s
B	800 ms	2.4 s
C	1 s	3 s
D	3 s	9 s
E	5 s	15 s
F	8 s	24 s

TEMPO > BPM TABLE FOR PAL C64

Yellow marks the tempo closest to 120BPM for every column.

TEMPO SETTING IN SID-WIZARD

	01	02	03	04	05	06	07	08	09	0A
1	3007,47	1503,74	1002,49	751,87	601,49	501,25	429,64	375,93	334,16	300,75
2	1503,74	751,87	501,25	375,93	300,75	250,62	214,82	187,97	167,08	150,37
3	1002,49	501,25	334,16	250,62	200,50	167,08	143,21	125,31	111,39	100,25
4	751,87	375,93	250,62	187,97	150,37	125,31	107,41	93,98	83,54	75,19
5	601,49	300,75	200,50	150,37	120,30	100,25	85,93	75,19	66,83	60,15
6	501,25	250,62	167,08	125,31	100,25	83,54	71,61	62,66	55,69	50,12
7	429,64	214,82	143,21	107,41	85,93	71,61	61,38	53,70	47,74	42,96
8	375,93	187,97	125,31	93,98	75,19	62,66	53,70	46,99	41,77	37,59
9	334,16	167,08	111,39	83,54	66,83	55,69	47,74	41,77	37,13	33,42
10	300,75	150,37	100,25	75,19	60,15	50,12	42,96	37,59	33,42	30,07
11	273,41	136,70	91,14	68,35	54,68	45,57	39,06	34,18	30,38	27,34
12	250,62	125,31	83,54	62,66	50,12	41,77	35,80	31,33	27,85	25,06
13	231,34	115,67	77,11	57,84	46,27	38,56	33,05	28,92	25,70	23,13
14	214,82	107,41	71,61	53,70	42,96	35,80	30,69	26,85	23,87	21,48
15	200,50	100,25	66,83	50,12	40,10	33,42	28,64	25,06	22,28	20,05
16	187,97	93,98	62,66	46,99	37,59	31,33	26,85	23,50	20,89	18,80
17	176,91	88,46	58,97	44,23	35,38	29,49	25,27	22,11	19,66	17,69
18	167,08	83,54	55,69	41,77	33,42	27,85	23,87	20,89	18,56	16,71
19	158,29	79,14	52,76	39,57	31,66	26,38	22,61	19,79	17,59	15,83
20	150,37	75,19	50,12	37,59	30,07	25,06	21,48	18,80	16,71	15,04
21	143,21	71,61	47,74	35,80	28,64	23,87	20,46	17,90	15,91	14,32
22	136,70	68,35	45,57	34,18	27,34	22,78	19,53	17,09	15,19	13,67
23	130,76	65,38	43,59	32,69	26,15	21,79	18,68	16,34	14,53	13,08
24	125,31	62,66	41,77	31,33	25,06	20,89	17,90	15,66	13,92	12,53
25	120,30	60,15	40,10	30,07	24,06	20,05	17,19	15,04	13,37	12,03
26	115,67	57,84	38,56	28,92	23,13	19,28	16,52	14,46	12,85	11,57
27	111,39	55,69	37,13	27,85	22,28	18,56	15,91	13,92	12,38	11,14
28	107,41	53,70	35,80	26,85	21,48	17,90	15,34	13,43	11,93	10,74
29	103,71	51,85	34,57	25,93	20,74	17,28	14,82	12,96	11,52	10,37
30	100,25	50,12	33,42	25,06	20,05	16,71	14,32	12,53	11,14	10,02
31	97,02	48,51	32,34	24,25	19,40	16,17	13,86	12,13	10,78	9,70
32	93,98	46,99	31,33	23,50	18,80	15,66	13,43	11,75	10,44	9,40

TEMPO SETTING IN SID-WIZARD (CONTINUED)

	0B	0C	0D	0E	0F	10	11	12	13	14
1	273,41	250,62	231,34	214,82	200,50	187,97	176,91	167,08	158,29	150,37
2	136,70	125,31	115,67	107,41	100,25	93,98	88,46	83,54	79,14	75,19
3	91,14	83,54	77,11	71,61	66,83	62,66	58,97	55,69	52,76	50,12
4	68,35	62,66	57,84	53,70	50,12	46,99	44,23	41,77	39,57	37,59
5	54,68	50,12	46,27	42,96	40,10	37,59	35,38	33,42	31,66	30,07
6	45,57	41,77	38,56	35,80	33,42	31,33	29,49	27,85	26,38	25,06
7	39,06	35,80	33,05	30,69	28,64	26,85	25,27	23,87	22,61	21,48
8	34,18	31,33	28,92	26,85	25,06	23,50	22,11	20,89	19,79	18,80
9	30,38	27,85	25,70	23,87	22,28	20,89	19,66	18,56	17,59	16,71
10	27,34	25,06	23,13	21,48	20,05	18,80	17,69	16,71	15,83	15,04

TEMPO > BPM TABLE FOR NTSC C64

Yellow marks the tempo closest to 120BPM for every column.

TEMPO SETTING IN SID-WIZARD

	01	02	03	04	05	06	07	08	09	0A
1	3589,57	1794,78	1196,52	897,39	717,91	598,26	512,80	448,70	398,84	358,96
2	1794,78	897,39	598,26	448,70	358,96	299,13	256,40	224,35	199,42	179,48
3	1196,52	598,26	398,84	299,13	239,30	199,42	170,93	149,57	132,95	119,65
4	897,39	448,70	299,13	224,35	179,48	149,57	128,20	112,17	99,71	89,74
5	717,91	358,96	239,30	179,48	143,58	119,65	102,56	89,74	79,77	71,79
6	598,26	299,13	199,42	149,57	119,65	99,71	85,47	74,78	66,47	59,83
7	512,80	256,40	170,93	128,20	102,56	85,47	73,26	64,10	56,98	51,28
8	448,70	224,35	149,57	112,17	89,74	74,78	64,10	56,09	49,86	44,87
9	398,84	199,42	132,95	99,71	79,77	66,47	56,98	49,86	44,32	39,88
10	358,96	179,48	119,65	89,74	71,79	59,83	51,28	44,87	39,88	35,90
11	326,32	163,16	108,77	81,58	65,26	54,39	46,62	40,79	36,26	32,63
12	299,13	149,57	99,71	74,78	59,83	49,86	42,73	37,39	33,24	29,91
13	276,12	138,06	92,04	69,03	55,22	46,02	39,45	34,52	30,68	27,61
14	256,40	128,20	85,47	64,10	51,28	42,73	36,63	32,05	28,49	25,64
15	239,30	119,65	79,77	59,83	47,86	39,88	34,19	29,91	26,59	23,93
16	224,35	112,17	74,78	56,09	44,87	37,39	32,05	28,04	24,93	22,43
17	211,15	105,58	70,38	52,79	42,23	35,19	30,16	26,39	23,46	21,12
18	199,42	99,71	66,47	49,86	39,88	33,24	28,49	24,93	22,16	19,94
19	188,92	94,46	62,97	47,23	37,78	31,49	26,99	23,62	20,99	18,89
20	179,48	89,74	59,83	44,87	35,90	29,91	25,64	22,43	19,94	17,95
21	170,93	85,47	56,98	42,73	34,19	28,49	24,42	21,37	18,99	17,09
22	163,16	81,58	54,39	40,79	32,63	27,19	23,31	20,40	18,13	16,32
23	156,07	78,03	52,02	39,02	31,21	26,01	22,30	19,51	17,34	15,61
24	149,57	74,78	49,86	37,39	29,91	24,93	21,37	18,70	16,62	14,96
25	143,58	71,79	47,86	35,90	28,72	23,93	20,51	17,95	15,95	14,36
26	138,06	69,03	46,02	34,52	27,61	23,01	19,72	17,26	15,34	13,81
27	132,95	66,47	44,32	33,24	26,59	22,16	18,99	16,62	14,77	13,29
28	128,20	64,10	42,73	32,05	25,64	21,37	18,31	16,02	14,24	12,82
29	123,78	61,89	41,26	30,94	24,76	20,63	17,68	15,47	13,75	12,38
30	119,65	59,83	39,88	29,91	23,93	19,94	17,09	14,96	13,29	11,97
31	115,79	57,90	38,60	28,95	23,16	19,30	16,54	14,47	12,87	11,58
32	112,17	56,09	37,39	28,04	22,43	18,70	16,02	14,02	12,46	11,22

TEMPO SETTING IN SID-WIZARD (CONTINUED)

	0B	0C	0D	0E	0F	10	11	12	13	14
1	326,32	299,13	276,12	256,40	239,30	224,35	211,15	199,42	188,92	179,48
2	163,16	149,57	138,06	128,20	119,65	112,17	105,58	99,71	94,46	89,74
3	108,77	99,71	92,04	85,47	79,77	74,78	70,38	66,47	62,97	59,83
4	81,58	74,78	69,03	64,10	59,83	56,09	52,79	49,86	47,23	44,87
5	65,26	59,83	55,22	51,28	47,86	44,87	42,23	39,88	37,78	35,90
6	54,39	49,86	46,02	42,73	39,88	37,39	35,19	33,24	31,49	29,91
7	46,62	42,73	39,45	36,63	34,19	32,05	30,16	28,49	26,99	25,64
8	40,79	37,39	34,52	32,05	29,91	28,04	26,39	24,93	23,62	22,43
9	36,26	33,24	30,68	28,49	26,59	24,93	23,46	22,16	20,99	19,94
10	32,63	29,91	27,61	25,64	23,93	22,43	21,12	19,94	18,89	17,95