*** SDI 2.1.7 - KEYBOARD SHORTCUTS ***

KEYBOARD COMMANDS FOR SEQUENCER, TRACKER & SOUND EDITOR

←	Fast forward play
C= 1-4	Track on/off
F1	Play from mark (mark made with F2)
F2	Set play mark
F3	Stop/Continue play
F6	Tracker data on/off
F7/F8	Select octave (individual octaves for each track)
=	Play current line (press again to stop)
Z	Play song from current line
RUN/STOP	Sound Editor (Press again to exit)
/	Toggle Sequencer/Tracker & Sound editor edit on same screen
SHIFT L	Load music
C= S	Dump music
C= +/-	Next/Previous song
?	Set speed calls
C= Q	Quantize (0/2) for recording notes
CRSR	Left/Right/Up/Down

KEYBOARD COMMANDS FOR SEQUENCER AND TRACKER

F5	Toggle Tracker or Sequencer
C= *	Set speed channels (place cursor on track)
H	Hunt for next unused sequence and replace it.
S/L	Tab jump left/right
V	View player counters/Full screen sequencer
SHIFT CLR/HOME	To start of song
SHIFT S	Save Music
SHIFT A	Increase cursor jump
C= A	Decrease cursor jump
SHIFT C	Copy sequence (whole sequence)
SHIFT V	Paste into sequence (whole sequence)
SHIFT D	Double sequence length
C= C	Clone sequence and insert on next track line
C= F	Fill sequence with empty lines (From cursor position)
C= H	Hunt for next unused sequence - Insert it in the next track line
C= I	Insert a track line
C= K	Kill sequence/Unused/Make a sequence ready for use
M	Set start mark (grey background is marked area)
SHIFT M	Set end mark
C= M	Copy marked area to cursor position
:/[	Set track transpose
;/]	Set sequence number

KEYBOARD COMMANDS IN SEQUENCER

F4	Edit/Synth/Record mode (Grey/Blue/Red)
INST/DEL	Delete a line
SHIFT INST/DEL	Insert a line
CLR/HOME	Cycle Sequence Top/Middle/Bottom
SPACE	Delete down (depends on cursor jump)
SHIFT SPACE	Delete up (depends on cursor jump)
SHIFT X	Narrow sequence fom cursor pos. (remove every 2nd line)
C= X	Expand sequnce from cursor pos. (place cursor on a odd line)
C= RTYU	Set sequencer mark.
C= 5678	Jump to sequencer mark.
,/.	Jump down/up 16 lines
)/(	Increase/Decrease notes from cursor position.
C= RETURN	Start playing music from top of current sequence.
SHIFT RETURN	Play and Loop music from top of current sequence.
RETURN	Play song from current line (same as Z)
N	Turn note to tie/normal
SHIFT N	All marked notes turned to normal
C= N	All marked notes turned to tie
G	Gate on (GAT in sequence)
SHIFT G	Gate off (gat in sequence)

TRACKER KEYBOARD COMMANDS

)	Increase transpose values or sequence values.
(	Increase transpose values or sequence values.
INST/DEL	Delete a track line
SHIFT INST/DEL	Insert a track line
RETURN	Set loop mark for current channel
SHIFT RETURN	Set stop mark for current channel
SHIFT 1-3	Swap tracks (including all sub songs - music must be off)

*** SDI 2.1.7 - KEYBOARD SHORTCUTS / SEQUENCER EFFECTS ***

SOUND/INSTRUMENT EDITOR KEYBOARD COMMANDS

N	Name sound/instrument (return to exit)
+/-	Select sound
SHIFT +/-	Select sound with focus on displaying their programs
)/(	Select arpeggio number with focus on the arpeggio data.
SHIFT A	Arpeggio program table
SHIFT F	Filter program table
SHIFT I	Initial volume and Filter channels/Filter speed table
SHIFT P	Pulse program table
SHIFT S	Sound setup table
SHIFT T	Tempo program table
SHIFT V	Vibrato program table
SHIFT W	Waveform program table
M	Mark sound
SHIFT M	Copy sound
RETURN	Put current program line into sound setup. Only for waveform, pulse, filter and vibrato. (RETURN in tempo table will set default tempo for this song).
SHIFT RETURN	Delete program from sound setup. Only for waveform, pulse, filter and vibrato.
,/.	Jump 4 lines up/down
CLR/HOME	Go to current sound's program line (if there's one). (For arpeggio it will display current arpeggio at top).
SHIFT CLR/HOME	Go to top of program line table
INST/DEL	Delete a program line. (not for sound setup table)
SHIFT INST/DEL	Insert a program line. (not for sound setup table)

LOAD MENU COMMANDS

SPACE	Read a new directory into memory
SHIFT SPACE	Go to DOS command screen
*	Display files A-Z
SHIFT *	Display files Z-A
A-Z	Set display path
CTRL 1-0	Select disk drive 11,12,13,14,15,16,17,8,9 and 10.
CRSR	Select music
RETURN	Load music
SHIFT RETURN	Load the file "clear memory" to clear and keep sound data intact
,/.	Jump 8 files up/down
CLR/HOME	Top of directory
SHIFT CLR/HOME	Bottom of directory
RUN/STOP	Exit

SEQUENCER FX + NOTE COMBINATIONS (CHANNELS 1-3)

06 ---	[00-1F]	Set sound number 06 and no note
10 C-4	[00-1F]	Set sound number 10 and note C-4
06 [C-4]	[00-1F]	Add sound number to waveform and tie note [C-4]
2E C-4	[21-3F]	Set glide value 2E and note C-4
2E [C-4]	[21-3F]	Set glide value 2E and tie note [C-4]
22 ---	[21-3F]	Set vibrato program 02
40 ---	[40-6F]	Set arpeggio 00 and no note
44 C-4	[40-6F]	Set arpeggio 04 and note C-4
6F [C-4]	[40-6F]	Set arpeggio 2F and tie note [C-4]
74 ---	[70-7F]	Set release 04 (cannot have a note combination here)
74 C-4	[70-7F]	Set sustain 40 and note C-4
7A [C-4]	[70-7F]	Set attack A0 and tie note [C-4]
-- C-4	[C#0-A#7]	Notes (played with current sustain value - if set)
-- [C-4]	[C#0-A#7]	Tie notes
-- GAT	[C-0]	Set gate on for current sound
-- [GAT]	[C-0]	Set gate off using current sound release value
70 C-4	[70]	Restore current sound original ADSR values with note C-4

SEQUENCER FX + NOTE COMBINATIONS (CHANNEL 4)

06 ---	[01-1F] Set tempo to 06 and no transpose
04 C#0	[01-1F] [C-0 to A#7] Set tempo to 04 and transpose 1
-- D-0	Set transpose 2
41 ---	[40-60] Look up tempo program 01
44 GAT	[40-60] Look up tempo program 04 and transpose 0.
70 ---	[70] Filter control back to main filter channel
71 ---	[71-7F] Force filter output
21 ---	[21-3F] Force filter program 01
63 ---	[61-67] Forced filter band 03

*** SDI 2.1.7 - PULSE / FILTER / ARPEGGIO / TEMPO PROGRAM ***

PULSE AND FILTER PROGRAM

```
C1 : Table position                    C4 : Sweep speed
C2 : PulseLow/PulseHigh start value    C5 : Sweep Mode or sweep jump
C3 : PulseLow/PulseHigh sweep value
```

```
Pulse sweep example (continuous sweep):
C1 C2 C3 C4 C5       C2:Start pulse $08      C3:Sweep between $20 and $D0
01:08 2D 15 41       C4:Sweep speed $15      C5:Continuous sweep to line 01

Filter example (fixed):
C1 C2 C3 C4 C5       C2:Cutoff start $60     C3:00 means treat as filter frame
01:60 00 18 81       C4:Band $10/Res $08     C5:1 frame delay, then loop to 01

Filter example (sweep and stay):
C1 C2 C3 C4 C5       C2:Cutoff start $90     C3:Sweep from $70 to $30
01:90 73 03 80       C4:Sweep speed $03      C5:Stop

Filter example (continuous sweep):
C1 C2 C3 C4 C5       C2:Cutoff start $60     C3:Sweep between $20 and $40
01:60 24 01 41       C4:Sweep speed $01      C5:Continuous sweep to line 01

C5 commands:
00,40,80,C0    Sweep until reaching end value, then the sweep will stop.
               No jumping to other pulse program line will occur.
               The result of the pulse sweep all depends on the values
               used in C1 and C2.
0X-3F          Sweep till end value then cut to the C2 value.
               X indicates which program line to cut to when reaching end.
4X-7F          If X points to the same program line then the sweep will be
               continous between the two values in C3.
               If X points to a different program line the sweep will first
               go all the way betweem the two values in C3, then it will sweep
               to the new program line value in C3.
8X-BF          Sweep till end value then cut to the C2 value.
               Behaves the same way as 0X-3F but the sweep is reverse.
CX-FF          Continous sweep between the 2 values in column 3.
               Behaves the same way as 4X-7F but the sweep is reverse.
```

ARPEGGIO

```
C1 : Table position                    C3 : Jump to position
C2 : Transpose                         C4 : Speed (0,4,8,C)/Instrument #
```

```
NOTE! ADD $80 TO INSTRUMENT WAVEFORM, IE. SAW ($21) BECOMES $A1.
ALWAYS START WITH NO TRANSPOSE IN TABLE, OR ELSE IT WILL PLAY 2-3-1-2-3-1-2-3...

Minor chord example:
C1 C2 C3 C4
00:00 05 40          C3:Jump to position 05          C4:Speed 4/Instrument 0
..
05:00 00 00          CHORD: No transpose
06:07 00 00          CHORD: Transpose 7 semitones up
07:83 00 00          CHORD: Loop ($80) and transpose 3 semitones up

Usage in sequencer:
00  40 C-5     Use chord at position 00 (jumps to 05) using C-5 as root note
01  -- ---
02  41 F-3     Use chord at position 01 (jumps to XX) using F-3 as root note
```

TEMPO PROGRAM

```
C1 C2 C3
00:84 00       Use speed 4

C1 C2 C3
00:08 00       This will make a swing tempo
00:84 00       between speed 8 and speed 4

C1: Program line position & tempo program number.
C2: Tempo values. Using values greater than 80 indicates a loop.
    Valid tempo values 01-7F and 81-FF. Do not use 00 or 80!
C3: Program line lookup pointer.

You can also call these tempo programs with $40-$6f from track 4
in the sequencer.
```

*** SDI 2.1.7 - WAVE PROGRAM / SOUND EDITOR / FIXED NOTE TABLE ***

WAVEFORM PROGRAM

```
C1 : Table position
C2 : Waveforms and waveform commands
C3 : soft/fixed note values and 2nd part of the waveform comma
```

```
Waveform example (Sawtooth sound)
C1 C2 C3
00:09 00            C2:Hard restart - use this for drums or other crisp sounds
00:21 00            C2:Set sawtooth with gate on
00:20 0C            C2:Set sawtooth with gate off   C3:Add 12 semitones
01:FF 00            C2:Jump to position 00 (loop)

Press RETURN to insert the start of the waveform program into your Sound Setup.

Possible note values for 3rd column (c3):

00-5E  Soft notes, added to note+track transpose.
60-7F  Soft notes, subtracted from note+track transpose.
80-DE  Fixed notes, overrides note+track tranpose.

Standard Waveforms
10     Triangle waveform.
20     Sawtooth waveform.
40     Pulse waveform. (pulse value must be set)
80     Noise waveform.

You also have the possibilty to add ring modulation and sync:

02     Gate off Sync Bit:
03     Gate on Sync Bit:
04     Gate off Ring Modulation:
05     Gate on Ring Modulation:

Adding Gate on Ring modulation to Triangle waveform gives: 15
```

SOUND EDITOR

```
05  WAVEFORM  PRG:  Waveform program
08  ATTACK/DECAY :  Attack/decay
7D  SUSTA/RELEASE:  Sustain/release
20  GATE TIMEOUT :  Gate timeout/hard restart. Let you specify for how long the
                    player shall wait before setting release.
                    No timeout: Values 00,20,40,60,80,A0,C0,E0
                    01-1F normal hard restart, 21-3F, hard restart 2,
                    41-5F hard restart 3, 61-7F hard restart 4.
08  VIBRATO   PRG:  Vibrato program
02  PULSE     PRG:  01-40:Pulse program / 41-80:Pulse program with
                    infinite sweep.
01  FILTER    PRG:  01-40:Filter program / 41-80:sweep mode 1 /
                    81-C0:Sweep infinite mode 2 / C1-FF:Sweep mode 3
1F  BAND/RESONANS:  Band/Resonance settings
00  DETUNE HI    :  01-7F Finetune up / 80-FF Finetune down
00  DETUNE LO    :  01-FF = Finetuning. Direction depends on Detune Hi.
```

FIXED NOTE TABLE

OCTAVE 0	OCTAVE 1	OCTAVE 2	OCTAVE 3	OCTAVE 4	OCTAVE 5	OCTAVE 6	OCTAVE 7
## : RES	## : RES	## : RES	## : RES	## : RES	## : RES	## : RES	## : RES
80 : C-0	8C : C-1	98 : C-2	A4 : C-3	B0 : C-4	BC : C-5	C8 : C-6	D4 : C-7
81 : C#0	8D : C#1	99 : C#2	A5 : C#3	B1 : C#4	BD : C#5	C9 : C#6	D5 : C#7
82 : D-0	8E : D-1	9A : D-2	A6 : D-3	B2 : D-4	BE : D-5	CA : D-6	D6 : D-7
83 : D#0	8F : D#1	9B : D#2	A7 : D#3	B3 : D#4	BF : D#5	CB : D#6	D7 : D#7
84 : E-0	90 : E-1	9C : E-2	A8 : E-3	B4 : E-4	C0 : E-5	CC : E-6	D8 : E-7
85 : F-0	91 : F-1	9D : F-2	A9 : F-3	B5 : F-4	C1 : F-5	CD : F-6	D9 : F-7
86 : F#0	92 : F#1	9E : F#2	AA : F#3	B6 : F#4	C2 : F#5	CE : F#6	DA : F#7
87 : G-0	93 : G-1	9F : G-2	AB : G-3	B7 : G-4	C3 : G-5	CF : G-6	DB : G-7
88 : G#0	94 : G#1	A0 : G#2	AC : G#3	B8 : G#4	C4 : G#5	D0 : G#6	DC : G#7
89 : A-0	95 : A-1	A1 : A-2	AD : A-3	B9 : A-4	C5 : A-5	D1 : A-6	DD : A-7
8A : A#0	96 : A#1	A2 : A#2	AE : A#3	BA : A#4	C6 : A#5	D2 : A#6	DE : A#7
8B : B-0	97 : B-1	A3 : B-2	AF : B-3	BB : B-4	C7 : B-5	D3 : B-6	DF : B-7

*** SDI 2.1.7 - VIBRATO PROGRAM / DUMPING AND ASSEMBLING ***

VIBRATO PROGRAM

```
C1:   displays the table position.
C2:   displays the delay value, detune command(s) and
      infinite loop command (FF). Delay values range from 01-FD:
               00 = detuning and continue
            01-FD = delay value
               FE = detuning and hold
               FF = infinite loop on vibrato.
C3:   displays vibrato width:
            00-7F = going up then down
            80-FF = going down then up - or...
      detune value low byte
C4:   displays vibrato speed - or...
      detune value High byte
```

```
Vibrato example (Crazy Comet):
C1 C2 C3 C4
00:08 00 00               C2:Wait 8 frames
01:FF 10 BE               C2:Infinite loop   C3:Delay 10    C4:Vibrato width BE

Vibrato example (Detuning):
C1 C2 C3 C4
01:FE DL DH               C2:Detune/hold     C3:Detune LO   C4:Detune HI

Vibrato example (Detuning followed by vibrato):
C1 C2 C3 C4
01:00 DL DH               C2:Detune/cont     C3:Detune LO   C4:Detune HI
02:FF 03 32               C2:Infinite loop   C3:VibWdth 03  C4:VibSpeed 32

DL = Low value of frequency detuning  (Depends on DH)
DH = High value of frequency detuning (00-7F : finetune upwards)
                                      (FF-80 : finetune downwards)

Most likely you will only feel for changing the DL value and leave DH to zero.
You can call a vibrato program in the sequencer with $21-$3f.
```

DUMPING AND ASSEMBLING A TUNE

- using Action Replay Cartridge

1. Press C=+S to dump the tune.
2. Load "SDI TASS /9000" and start with SYS4096*9.
3. Press ←+L to load "S.SDI21-N50" (the singlespeed player routine).
4. Once loaded, press F8 to go the bottom of the player code
   (just below the "rts" opcode).
5. Press ←+E to load and append the dumped tune to the player routine.
   Remember to add a SPACE at the beginning!
6. Adjust flags as necessary at the beginning of the file.
7. If the tune needs a different start address than $1000, which is the
   default, go to the section ";------------------START OF DRIVER/DATA-"
   (around line 408).
8. Change "*= $1000" to the new start address.
9. Press ←+3 to assemble, and S to preview the tune.
10. If all is OK, press ←+3 once again, but do not preview this time.
    Take note of the end address (ex. $1e15).
11. Press SPACE, and go to BASIC by pressing ←+1.
12. Enter the monitor by typing MON
13. Save the entire thing as a PRG file by typing:

    s"final music",8,1000,1e16

    (1000 is the start address, and 1e16 is the end address PLUS ONE BYTE!)
14. Now go rip the SID in SIDedit or something... :)

SID DUZZ' IT 2.17 [SHAPE] (http://csdb.dk/release/?id=133692) by GR6 (http://csdb.dk/scener/?id=8098) and Geir Tjelta (http://csdb.dk/scener/?id=1266). This Cheat Sheet was pieced together on feb. 14, 2016 by Psylicium/A4.