

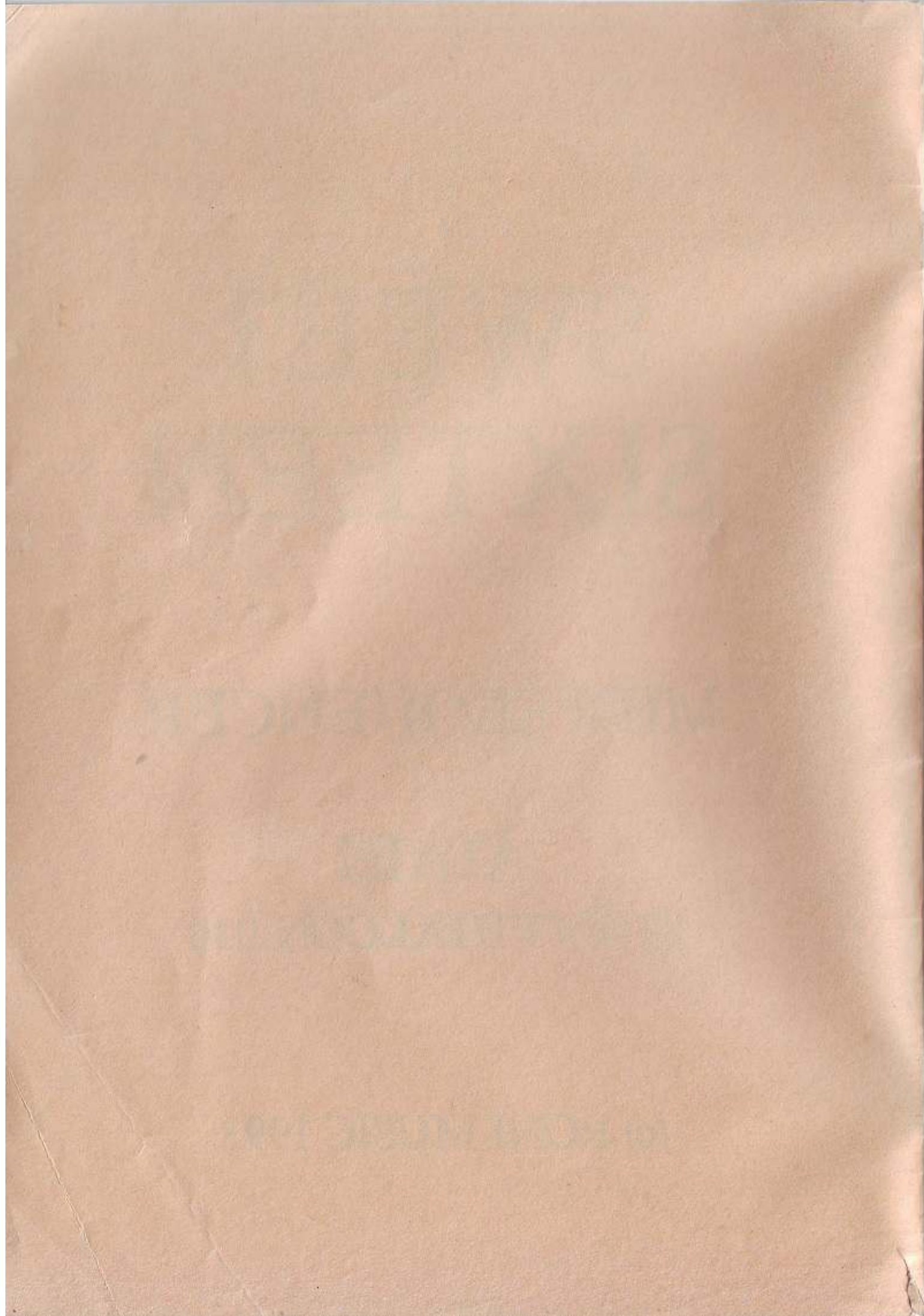
SWEET
SIXTEEN

MIDI SEQUENCER

ATARI

ST(E)/TT/FALCON 030

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SWEET SIXTEEN

This is a description of SWEET SIXTEEN MIDI SEQUENCER. Thanks to the multitasking capability you can use almost every command while the sequencer is running. Works on all ATARI ST(E)/TT/Falcon 030 in all screen resolutions with at least 640 * 200 pixels. The program has a very economic way of storing the MIDI events (120000 free events on a 1040, 40000 on a 520) and the resolution of the sequencer is 192 ticks/quarter note (PPQN). SWEET SIXTEEN will store all types of MIDI events including SYSTEM EXCLUSIVE. Since the program is based on GEM (the computers operating system), please read your ATARI manual if you're not used to it. You can control the sequencer entirely with the mouse but many commands are also accessible from the keyboard. Some of the commands are accessible only from the DROP DOWN MENUS. Left mouse button increases, right decreases. Adding the other button will speed up process.

The program operates in three modes: SONG, PATTERN and EDIT MODE.

PATTERN/SONG MODE is where all recordings takes place. Choose TEMPO, TIME SIGNATURE and GROOVE. TIME SIGNATURE and GROOVE does not affect the way the music is recorded, only the way it is displayed. GROOVE is how you subdivide the beat (quarter, eight note etc). So if you record a funk groove, choose 16, a hip hop groove, choose 24, an afro beat, choose 12 and so on. All BARCOUNTERS and POSITION/NOTE LENGTH in EDIT MODE will be affected.

Now choose a PATTERN. Hitting RECORD will start a one

bar PREECOUNT and you can start playing at once since SWEET SIXTEEN is able to record at any time. Left click on RECORD will erase previous recording, right click will overdub. STOP ends recording and hitting PLAY will start playing at bar one. If you have recorded during the precount you have to move the position equally much back and then hit the PAUSE/CONTINUE key (in SONG MODE, see PREE START below). To move to a new position, change the MAIN BAR COUNTER (you can also use the plus and minus signs at the calculator keypad). If the sequencer is stopped, PAUSE/CONTINUE will start at the MAIN BARCOUNTER'S position. Hitting PAUSE/CONTINUE while playing or recording will stop the sequencer but it will remain in the current mode.

You can record up to sixteen TRACKS in seventeen different PATTERNS. Highlighted track is current one. To change track, click on space where you enter track name. To change pattern, click on pattern number. To name pattern, double click inside the pattern name area. All values you change inside pattern area are non-destructive (they don't change events in memory, real time altered). QUANTIZATION, which uses a little POP UP MENU (highlight desired value and release button), alters memory but is still reversible (changes note on, keeps note length the same). With menu item QUANTIZE SETTINGS you choose the type of quantizing you want. STRAIGHT QUANTIZE will move the notes to an exact position. HUMAN QUANTIZE will move the note with the chosen value, SWING FACTOR will add/sub swing to the notes.

Tracks MIDI CHANNEL is A1 - A16 (with optional 16+ cartridge you will get another sixteen channels B1 - B16), this is also the MIDI THRU CHANNEL. When symbol -- is displayed, the track outputs all channels (the channels you see in the event editor). LOOP values are displayed in the current beat value and the beginning of the LOOP is at bar one of the

pattern (events recorded before this is not included). You can also change the VELOCITY, TRANSPOSE, COMPRESS and DELAY values. If you wish DELAY advance (a minus sign before the value) the music before "one" you must start the sequencer that much before "one" or use a PREE START value in SONG MODE (see below). A click on the VU-METER will MUTE track. "Dragging" a recorded track to the left will delete it. "Dragging" a recorded track up or down will COPY or MERGE it. DOUBLE CLICK on a recorded track and you can name it. (On STE's (TOS 1.04 and up) you must use a mouse button fixer because of bug in TOS). DOUBLE CLICK on an empty track will initialize it and you can move over to the EDIT MODE for inserting (or deleting) events.

In SONG MODE you can arrange pattern 1-16 in any order and length with the help of an ARRANGE LIST. Pattern 17 will play in parallel alongside the arranger. This way SWEET SIXTEEN becomes a 32 track sequencer. To be able to listen to pattern 17 while recording in another pattern you must record in SONG MODE. A click on icon M to the right of SONG/PATTERN MODE selector will mute pattern 17.

You have 32 POSITIONS where you can have different TRANSPOSE values for the pattern (you can choose MIDI channels which will not be transposed, see DISABLE TRANSPOSE in OVERALL SETTINGS) and you can MUTE any track temporarily in a position, (click small icons numbered 1 - 16, black = mute). Every arrange position may have a name and the name STOP will make this entry a STOP POSITION. Uppermost arrange position is current one. Here you can DELETE (move all subsequent positions back one step) or INSERT (move all forward) and PATTERN LENGTH is shown for this position. Since it is possible to record during the PREECOUNT (before "one") your music may start with an upbeat. To be able to hear this, every position may have a PREE START value. This means that the current pattern will

start before "one" with this many bars, beats or "ticks". Since PREE START ends the previous position earlier and there might be a lot of note off commands to send, you can also use PREE START to spread out the MIDI stream to get a good timing (some synths don't like too much data in one chunk). Also try to use the RUNNING STATUS flag ticked since this reduces the MIDI stream (only disable RUNNING STATUS if you encounter problems, this can happen with some older synths). Since MIDI is a bit slow it's possible to send out more data than the cable can "swallow". If you keep the menu item NOTE ON PRIORITY ticked, the program checks that notes get priority over other events such as pitchbend etc.

You can LOAD and SAVE songs, patterns and tracks, and also patterns as MIDI FILES (one track in a pattern and it is saved as format 0, two or more tracks will be saved as format 1). To store a whole song as a MIDI FILE, do like this: Disable MIDI THRU (click on VU-IN meter) and MIDI CLICK. Connect MIDI OUT to MIDI IN on the computer. Choose pattern 17 and start RECORD. You will now record the whole song directly to a track in pattern 17. If you have any SYSTEM EXCLUSIVE events on a track, do not include this (use mute). When ready, use menu item REMIX TRACK to extract MIDI channels. Pattern 17 now contains your song. Save this as a MIDI FILE. You can save while the music is playing. If you save a song called DEFAULT.SNG on the program disk, it will be loaded when the program is started. Here you can store the default settings you prefer.

In CYCLE MODE the sequencer will play between LEFT LOCATOR and RIGHT LOCATOR. PLAY will start at the left position and PAUSE/CONTINUE at the current one. It is also possible to record in CYCLE MODE. The music is overdubbed and quantizing will be carried out automatically after every cycle. While recording, you may delete each previous layer, type [B].

In EXTERNAL SYNC MODE you can sync the sequencer to an external device such as a drum machine, another sequencer or a tape recorder via MIDI sync. The program reads MIDI CLOCK for syncing and SONG POSITION POINTER (SPP) for finding the exact position to start. If CLOCK OUT is activated, MIDI CLOCK pulses is sent out via MIDI out. To sync to tape you will need an external device such as JL COOPER PPS-1. With this extra equipment you can start the tape at any point and the sequencer will start at that position. SWEET SIXTEEN uses Interpolation MIDI Sync which means you get full resolution (192 PPQN) in external sync mode.

SWEET SIXTEEN has four different edit modes. The EVENT EDITOR and GRID EDITOR are for notes and here you can do anything except record.

A right click on EDIT, [E], enters the EVENT EDITOR where you will see the MIDI events as a list, 16 lines long. With the mouse you can change any value in the list. If you click on the small icons to the right of the arrows, you can choose what to display (only note on, program change, pitch bend and so on). Clicking inside the display area or on the arrows will prevent the editor to follow the music. UNLOCK will start the scrolling again (also hitting PLAY, PAUSE and MAIN BARCOUNTER). Click on INSERT NOTE is obvious, click on OTHER will insert a none note event (program change etc). Click on CHANGE will change event (not note on) to other event. Since NOTE OFF can be either a "real" note off or a NOTE ON with the velocity of zero you here has the option to change from one to the other. Click or scroll on any value will change it. A click on the symbol "P" between the arrows will start the sequencer at current edit event position.

In the GRID EDITOR, left click on EDIT or type [G], you will

see the music as a "piano roll". With the left mouse button you can catch note and move it around. If you move the note to the left of the grid and release the button, the note will be deleted. If you left click at the lower end of the note, the mousepointer will change to a pointing finger. You can now alter the length of the note. A right click on the grid will insert a new note. Activating the SNAP icon will "quantize" the note while moving or inserting. Changing the value at RES will change the resolution of the grid. The note number at the note icon displays the start note of the keyboard. The GROOVE value will also affect how the grid is displayed.

The first altering you do in EDIT MODE will save the track to the UNDO buffer. Hitting UNDO will take you back to where you came from. To make any alterations permanent, exit EDIT MODE and re-enter again. A click on the EDIT icon will toggle between editmodes.

SWEET SIXTEEN contains two special tracks, TEMPO TRACK and TIME SIGNATURE TRACK. You normally enter tempo and time signature in the box under the main bar counter. If you at any point need to change the tempo or time signature, you will have to activate the special tracks. Click on SIGN T icon, [W] or TEMPO icon, [T]. The TIME SIGNATURE EDITOR, [shift] + [W], and the TEMPO TRACK EDITOR, [shift] + [T], works exactly as the event editor. The tempo editor also contains a function called PROCESS where you can change all your tempo settings at once.

To COPY a track to another pattern, use menubar COPY TRACK function. Here you can also copy just a part of a track, PART COPY. MERGING tracks will alter events in memory so merged track sound the same as the two unmerged tracks. If they have different MIDI channels the

merged track will display --, that is, all 16 MIDI channels can be output from track. So if you MERGE to an initialized, empty track you can alter transpose, velocity, delay, compress and MIDI channel on all events on a track with just one command. Good for preparing MIDI FILES! QUANTIZATION will be as before regardless of the value you see.

Menubar functions KEEP/DELETE and TRANSFORM EVENTS works exactly as you think. Choose the type of event(s), MIDI channel(s), value for first and (if applicable) second databyte, what part of track and you will KEEP or DELETE the desired events. In TRANSFORM EVENTS you also have to enter the desired result in the RESULT BOX. You can leave any column unaffected with the symbols Cha, - 1- and -2-. You can also PROCESS the result with a fixed or percentage value.

With menubar function MODIFY TRACK you can alter the TRACK PARAMETER VALUES so they become visible in EDIT MODE, i.e. events in memory are changed. Choose what part of the track and any or all of the following parameters: MIDI CHANNEL, VELOCITY, TRANSPOSE, COMPRESS or QUANTIZE. Now you have the possibility to quantize or transpose just a section of the music on a track.

With PUSH TRACK you can move track forward or backward (alters position of MIDI EVENTS).

All barcounter and position values are local, that is, if in song mode a pattern starts at bar 33 and you want to delete an event there, it is timestamped inside the pattern as bar 1. With menu item ACTUAL POSITION activated all values will be relative to the start of the arrangerlist.

With UNDO you can regret any action performed on a track and you will see an explanation mark in the TRACK NAME area to remind you (does not work if more than one track is involved).

In OVERALL SETTINGS you can prevent MIDI channels from being transposed in SONG MODE, choose MIDI THRU off channel, choose events which will be filtered out (will not be recorded or output via MIDI thru), choose MIDI channel, note number and velocity for MIDI click note and choose controller events to be remaped while recording. You can also reverse the meaning of the mouse buttons (left-up/right-down or left-down/right-up).

The function keys is used to store barcounter (1-5) and locator (6-10) positions. Shift + functionkey to store, functionkey to recall.

Menu item CHECK TRACK [Z] will insert missing note offs, delete superfluous note offs and also delete duplicated events. Menu item CHECK NOTE OVERLAP [O] will shorten note lengths so they don't overlap.

Menu item MIXDOWN 16 TRACKS merges all tracks in a pattern to one track.

Menu item REMIX TRACK extracts events according to their MIDI channels.

Menu item INSERT MEASURES [I] moves all events at the left locator position to the right locator position.

Menu item DELETE MEASURES [Shift] + [I] erases all events between locators and moves all events lying beyond the right locator to the left locator position.

The VPT (Volume Program Transmitter, bottom left off the screen) allows you to store and transmit your default volume and program settings.

YOUR FIRST RECORDING

Connect MIDI OUT from your synthesizer to the computers MIDI IN and MIDI OUT from the computer to the synthesizers MIDI IN. If you have more synths, connect them via MIDI THRU from your synthesizer. If possible, set your synth to LOCAL OFF (this will disconnect the keyboard from the sound source in your synth). If you have an old synth without LOCAL ON/OFF (old DX-7's), you must disable MIDI THRU on the channel this synth receives on or else you will feed the synth with double events. Click on OVERALL SETTINGS in the OPTIONS MENU and you can disable MIDI THRU on a desired channel. Here you also have the possibility the FILTER out events which will not be recorded or sent back via MIDI THRU. Set all your synthesizers to different MIDI channels and to OMNI OFF (so they only receive on one MIDI channel).

Now choose a track for recording and an appropriate MIDI channel. Play on the keyboard and check that you can hear something (via MIDI THRU). Changing the TRANSPOSE, VELOCITY and COMPRESS values will also affect what you hear via MIDI THRU. As said earlier, regardless what values you have inside the PATTERN box, the events recorded into the computers memory will still be the same! The values you choose here are all REAL TIME ALTERED so you can at any time change them again. Click on RECORD and you will hear a one bar PREECOUNT and you can start the recording. If you want to, the click can be sent out to a drum machine. Enable MIDI CLICK in the FLAGS MENU and choose MIDI channel and note number in OVERALL SETTINGS. When ready, click on STOP, which will end the recording or click PLAY which will end the recording and immediately start playing from bar one. If the music is not tight enough,

QUANTIZE to desired value. Now you also have the possibility to enter a LOOP value which will loop the track from bar one. LOOP values are displayed in the current beat value. If in 4/4, 8 means two bars, 16 means 4 bars and so on. If not satisfied with the result, click on record and your previous "take" will be deleted and you are back in the precount. If you erased the track by mistake, stop the sequencer and click on UNDO and you have the old track back. Continue as before with more tracks and when you are ready with this pattern, move over to another one and repeat the process.

Now it is time to move over to the ARRANGE LIST and "chain" the patterns together in a desired order. In the arrange list you have 32 POSITIONS to enter any of the 16 PATTERNS in any length. Say you have the intro in pattern 1, verse in pattern 2, and the chorus in pattern 3. Enter pattern 1 in position 1, scroll to desired LENGTH and do the same with the other patterns. Say you have the first verse in position 2 and the second verse in position 3 and you have a flute melody that you only want to here the second verse. MUTE this track with the ARRANGE LIST MUTES in verse 1 (position 2) and it is muted in this entry. Towards the end of the song you may want to change the key of the chorus. Change the transpose value in the arrange list and the whole pattern will be transposed. Since you probably do not want to transpose the drums you have to choose what MIDI channels should not be affected, do this in OVERALL SETTINGS (disable transpose).

If the music don't sound the way you want to, you have a lot of different things available. Wrong notes is easy to delete or alter in EDIT MODE. If you want to delete longer sections, do this in DELETE/KEEP EVENTS. With MODIFY TRACK you can TRANPOSE, QUANTIZE, COMPRESS, change VELOCITY and MIDI CHANNEL on desired sections of the TRACK.

CONTROLLER EVENTS

Controller events can do a lot of different things. They have a number between 0 and 127. Here is a list of the most common ones.

Number	Meaning	Value
1	Modulation wheel	0-127
2	Breath controll	0-127
4	Foot controll	0-127
5	Portamento time	0-127
6	Data entry	0-127
7	Volume	0-127
8	Ballance	0-127
10	Stereo panning	0-127
11	Expression	0-127
64	Sustain	0=off/127=on
65	Portamento	0=off/127=on
66	Hold pedal	0=off/127=on
67	Soft pedal	0=off/127=on
96	Data increment	127
97	Data decrement	127
122	Local On/Off	0=off/127=on
123	All notes off	0
124	Omni off	0
125	Omni on	0
126	Mono mode on	0 + channel
127	Poly mode on	0

Check your synth manual to see which of those the synth responds to and also which one the synth's wheels will transmit. In OVERALL settings you can REMAP any incoming control number to a new one. With controller 7 (volume) you can make nice fadings in the music. If your synth don't send out this number, remap the MODULATION WHEEL (controller 1) to VOLUME (controller 7) and you have a nice REAL TIME mixer function (if in RECORD MODE, it will be recorded). Some synths (ROLAND etc.) sends out an ALL NOTES OFF message every time you stop playing a key. You don't need this while sequencing. In OVERALL SETTINGS you can choose two controller number which will be filtered out. In this case choose ALL NOTES OFF (controller 123).

MIDI EVENTS

MIDI (Musical Instrument Digital Interface) is universal standard that has existed since 1983. It's a serial interface, i.e. all events are transferred after each other. Every event consists of at least a STATUS BYTE telling us what type of event it is. Some events has an extra DATA BYTE, some has two extra data bytes and SYSTEM EXCLUSIVE has any number of data bytes. Since it's serial, when you hit a chord on your keyboard, it's actually a very fast arpeggio. This is also the way a computer works. A computer can only do one thing at any given moment but it does it extremely fast, so to us it appears as many things happens simultaneously. All the following events has a STATUS BYTE that tells us what type of event it is and what channel number it has. The channel number is between 1 and 16 and a synth can "listen" to one of those channels (OMNI MODE OFF) or all (OMNI MODE ON).

NOTE ON EVENTS has two data bytes. The first data byte tells the note number and the second data byte how hard (fast) it was struck (velocity value).

NOTE OFF EVENTS has two data bytes. The first data byte tells the note number and the second how fast the key was released. NOTE ON with a velocity of zero is also interpreted as note off.

PROGRAM CHANGE has one data byte. The data byte holds the program number.

PITCH WHEEL EVENTS has two data bytes where the first one is seldom used and the second one holds value between 0 - 127. 64 is no bend, 0 is maximum downward bend and 127 is maximum upward bend.

CHANNEL AFTERTOUCH EVENTS has one data byte for the amount.

POLY AFTERTOUCH EVENTS has two data bytes, one for the note number and one for the amount. If your keyboard sends aftertouch, check if the sound you use react to it. If not, it is advisable not to record them, i.e. filter them out.

CONTROLLER EVENTS has two data bytes. The first tells the controller number and the second the amount. More about controller events below.

SYSTEM EXCLUSIVE has any number of data bytes and ends with a special status byte called EOX (End Of Exclusive).

THE HISTORY OF THE

REPUBLIC OF THE

UNITED STATES OF AMERICA

FROM 1776 TO 1863

BY

W. H. RAY

NEW YORK

1863

THE

AMERICAN

BOOK

COMPANY

NEW YORK

1863

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COMPANY

NEW YORK

Keyboard shortcuts

Qwerty keyboard:

Song/Pattern Mode [A], Erase previous layer in Cycle Mode [B], Cycle Mode On/Off [C], Delete Events [D], Event Editor [E], Grid Editor [G], Transform Events [H], Keep Events [K], Modify Track [M], Name Pattern [N], Check Note Overlap [O], Push Track [P], Quantize Settings [Q], Solo Track [S], Tempo Track On/Off [T], Tempo Track Editor [Shift] + [T], Overall Settings [V], Time Signature Track On/Off [W], Time Signature Track Editor [Shift] + [W], Check Track [X], Int/Ext Sync [Y], Choose Pattern [0]..[9] and [Shift] + [1]..[7], Recall Song Position [F1]..[F5], Store Song Position [Shift] + [F1]..[F5], Recall Locators [F6]..[F10], Store Locators [Shift] + [F6]..[F10], Name Track [Esq], Delete Arrangeposition [Delete], Insert Arrangeposition [Insert], All notes Off/Reset Controllers [Help], Undo previous altering [Undo], Change Track [Arrow up]/[Arrow down].

Calculator Keypad:

Change arrange position [(]/[)], Replace Record [*], Overdub Record [/], Increase/Decrease Songposition [+]/[-], Stop [Enter], Pause/Continue [.,], Start [0].

In Editmode the commands for pattern and arrangelist will disappear and new will be added: Unlock [U], Delete current event [Delete], Eventlist up/down [Arrow up]/[Arrow down], Load current event position to locators in dialogbox [L]..[R].

RONI MUSIC Kristianstadsgatan 28b S-214 35 Malmoe
SWEDEN



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A 4