XL-7 / MP-7 Operation Manual Addendum

Software Version 1.17

Many cool and useful features have been added since the initial software release. This addendum describes these features.

New Features & Changes

- **Page 16 - New Song Event Source Option** - There is now a "song & patterns" option in the song edit menu, "Event Source" screen. When selected, the selected events from the song as well as the patterns will be used.
- **Page 16 - Song/Pattern Edit Lockout** - You now must be in the proper mode to enter the Song or Pattern Edit menus.
- **Page 16 - MIDI Song Position Pointer, Start, Continue, Stop** commands are now received.
- **Page 16 - MIDI Panic Button** - Kills all sounding notes internally and over MIDI.
- **Page 16 - New Song Mode Realtime Record screen** - The new screen adds Quantize, Metronome and Count-In fields to Song mode realtime record.
- **Page 17 - Aftertouch Curves** - Located in the Controllers menu, this feature allows you select one of four different response curves to tailor the aftertouch response to your playing style.
- **Page 18 - Local Control On/Off** - This Controllers menu function facilitates use of the keypads with an external sequencer.
- **Page 18 - Footswitch Enhancement** - The two footswitch jacks can now perform many new functions such as: punching in and out, start/stop sequencer. tap tempo, inc/dec channel, inc/dec sequence.
- **Page 19 - MIDI In Channels** - This is a data switch which allows incoming MIDI data to control either the A or B MIDI channels.
- **Page 20 - Rechannelize MIDI In** - This new feature will automatically rechannelize MIDI data when recording in order to simplify the recording process.
- **Page 20 - Keyboard Transpose** - This Controllers menu feature allows you to transpose the keyboard in semitone increments.

Manual Corrections
- **Page 20 -** Corrected instructions for: **Recording Realtime Controller Data into a Pattern**

Notes & Tips
- **Page 21 - Tips**
- **Page 22 - Event Timing Explanation**

Other Changes
- **Song Length** - Songs can now contain up to 999 bars.

New Pattern Play

Pressing **Play** in Pattern mode causes the selected pattern to continuously play and loop. The display changes as shown.

PLAY

```
ᵀ01  STOP    Ln:08    Bar:01 .1
CurPat: 002⁰    NextPat: 002⁰
```

The **Track Mute** buttons can be used to select specific tracks for playback. The track mute settings are saved when the pattern is saved and restored when the pattern is run.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
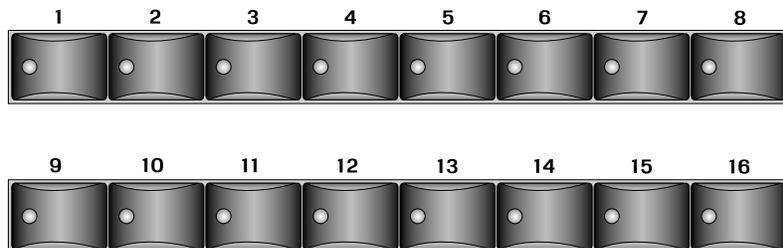
STOP

Pressing the **Stop** button stops the pattern immediately. Pressing **Stop again** rewinds the pattern to the beginning (RTZ). Pressing the **Stop** button a third time reloads the initial setup information for the Pattern (or Song).

To select another pattern while one is already playing: Turn the data entry control in Pattern Mode/View. The lower line of the display changes to show the name and number of the pattern you have selected. The Home/Enter LED will be flashing.

```
ᵀ01  STOP    Ln:08    Bar:01 .1
015⁰ Club Luv
```
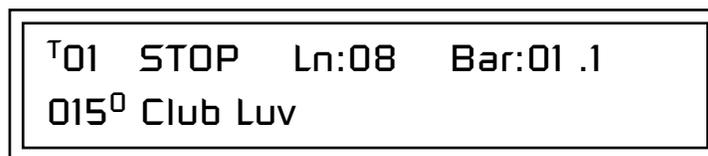
Press **Enter** to jump to the new pattern when the current pattern ends. The lower line of the display now shows the current and next pattern numbers.

```
ᵀ01  STOP    Ln:08    Bar:01 .1
CurPat: 002⁰    NextPat: 022⁰
```
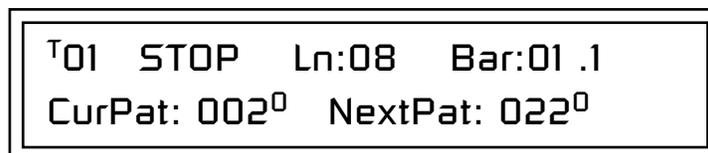
To start a new pattern immediately, press **Stop**, select the new pattern and press **Play**. **To select a pattern while playing,** press **Enter**, press **Stop**, then **Play**.

Note Range Option

You can now specify a note range when performing the following Song or Pattern editing functions: Scale/Shift Duration, Thin Events, Transpose and Scale/Shift Velocity. This gives you much more control over which notes are edited. See the "Set/Shift Duration" function below for a detailed description.

Scale/Shift Duration

This filter allows you to either scale (multiply by a value) or shift (add a value to) the note durations in the selected tracks. The Scale function is performed before the Shift value is added.

Scale - Multiplies all note durations by a percentage from 0% to 125%. Scaling by 100% would leave all note durations untouched. Scaling by 50% would cut all note durations in half.

Shift - Adds or subtracts a specific note duration in quarter notes and ticks to note-on events in the selected tracks.

▶ **To Scale or Shift Note Duration:**

1. **Select the pattern** you wish to edit.
2. Select the **Track(s)** you wish to Scale or Shift using the Track Enable/Mute buttons.
3. Press the **Pattern Edit** button.
4. Scroll to the **Scale/Shift Note Duration** screen shown below using the data entry control.

Tip: *To set all notes to a particular value, set Scale to 0%, (this zeros the value) then set Shift to the desired duration.*

```
┌─────────────────────────────────────┐
│ SCALE/SHIFT NOTE DURATION           │
│ Scale: 87%   Shift: +00.000         │
└─────────────────────────────────────┘
```
Quarter Notes   Ticks
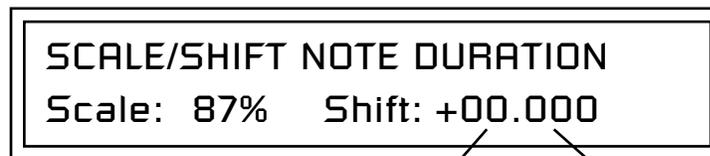
5. Select the **amount of note duration scaling or shift (offset)**. The Home/Enter LED will be flashing once the cursor is moved to the lower line of the display.
6. Press **Enter.** The screen shown below appears to remind you to select the tracks you want to filter. Select a key range for filtering. The default setting is all keys.

```
┌─────────────────────────────────────┐
│ SELECT TRACKS                       │
│ Key Range: C-2   to:G8              │
└─────────────────────────────────────┘
```
Low Key   High Key
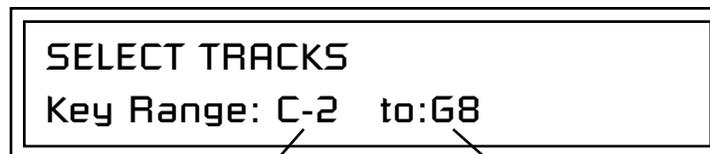
7. Press **Enter** to scale/shift the note durations. Press any other menu button to **Cancel** the operation.

Scale/Shift Velocity

This filter allows you to either scale (multiply by a value) or shift (add a value to) the velocity values of notes in a pattern. The Scale function is performed before the Shift value is added.

Scale - Multiplies all note-on velocities by a percentage from 0% to 125%. Scaling by 100% would leave all velocity values untouched. Scaling by 50% would cut all velocity values in half.

Shift - Adds or subtracts a specific velocity value (-127 to +127) to every note-on event in the pattern.

▶ **To Scale or Shift Velocity:**

1. **Select the pattern** you wish to edit.
2. Select the **Track(s)** you wish to Scale or Shift using the Track Enable/Mute buttons.
3. Press the **Pattern Edit** button.
4. Scroll to the **Scale/Shift Velocity** screen shown below using the data entry control.

Tip: *To set all notes to a particular velocity value, set Scale to 0%, then set Shift to the desired velocity.*

```
SCALE/SHIFT VELOCITY
Scale: 87%  Shift: +0
```

5. Select the **amount of velocity scaling or shift**. The Home/Enter LED will be flashing once the cursor is moved to the lower line of the display.
6. Press **Enter.** The screen shown below appears to remind you to select the tracks you want to velocity scale or shift. Select a key range. The default setting is all keys.

```
SELECT TRACKS
Key Range: C-2  to:G8
```

7. Press **Enter** to change velocity in the selected tracks. Press any other button to **Cancel** the operation.

Extend Sequence Data To

This feature lets you change the length of any selected tracks after recording a pattern. If you are lengthening a pattern, the pattern is looped to fill in the empty space. If you set the length shorter than the existing pattern, the pattern will be truncated.

You can set the pattern length before you extend so that only those bars will be copied. The copied data will be merged with the data in the subsequent bars of the pattern.

To Extend the 1st Bar over 4 Bars

1. Set Pattern Length to 1-bar

Bar 1   Bar 2   Bar 3   Bar 4

2. Extend Sequence Data to 4-bars

Bar 1   Bar 2   Bar 3   Bar 4
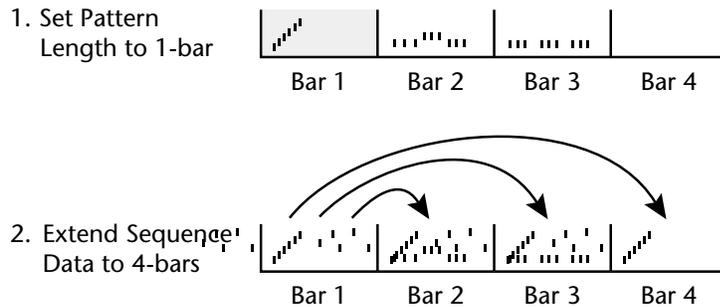
▶ **To Extend the Length of Selected Tracks:**

1. **Select the pattern** you wish to extend.

2. Press the **Pattern Edit** button from pattern mode.

3. Scroll to the **Pattern Length** screen and set the length to the measures you wish to extend. For example, if you want to copy the first measure, set the length to 1.

4. Scroll to **Extend Sequence Data** using the Data Entry Control.

```
EXTEND SEQUENCE DATA TO
bar: 8
```

5. Move the cursor to the lower line of the display and select the new pattern length.

6. **Select the Track(s)** that you want to extend using the Track Enable/ Mute buttons.

7. Press **Enter**. The following screen appears.

```
--- PERFORM OPERATION? ---
Enter = Yes    Other = Cancel
```
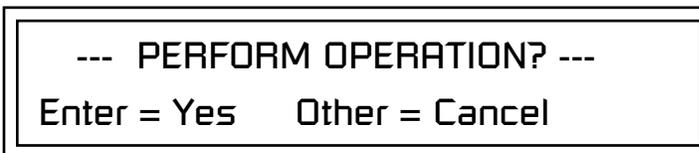
8. Press **Enter** again to extend the pattern or any other key to cancel the operation.

The Asterisk

The Asterisk

When a pattern (or song) has been edited and needs to be saved an asterisk (*) appears in the display. The Save/Copy LED will also be flashing as a reminder to save your work. The asterisk and your edits remain in the single edit buffer even if you change patterns. Edits are only erased by saving the pattern, editing another pattern, invoking the "Revert To Saved" feature, or turning the unit off. Saving saves the current pattern and NOT the edit buffer.

Asterisk Appears	No Asterisk
Pressing Rec	*Changing: tempo, meter, length, name, chan. asssign, etc.*
List Edit (press enter)	
Executing an Edit function	

```
┌─────────────────────────────────────┐
│ ᵀ01  STOP   Ln: 08   Bar: 01 . 1     │
│ 000⁰  Start of IT              *      │
└─────────────────────────────────────┘
```
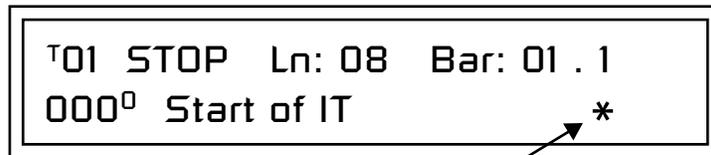
Indicates that the Pattern needs to be saved.

The following information is stored in non-volatile Flash memory, which is recalled just before the pattern is played.

Important: Pattern and Song Setup information is saved as it was set at the moment you saved the pattern or song.

- Pattern (Song) Name & Number
- Track Events *(patterns only)*
- Initial Tempo & Meter
- Master FX setup
- Track (Chan) to MIDI Channel mapping ....
- Track Mutes *(patterns only)* ....
- Bank/Program changes ....
- Volume & Pan settings................................
- Mix Output setup..
- Arp Status (off, on, preset, master) ....

These parameters are stored for each track used in a pattern or each channel used in a song.

✎ *Use the "Revert to Saved Pattern" feature to remove the asterisk and discard your pattern edits.*

Cut/Copy Track Section

You can now specify a bar range to be cut or copied to the clipboard when editing a track. This function cuts or copies a section of a track from the pattern or song and places it on the clipboard, where it will be held until it is replaced with another cut or copy operation, or the power is turned off.

Cut
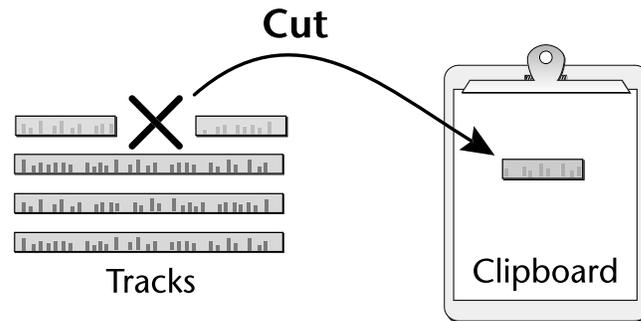
The cut section is placed on the clipboard leaving a blank space in the track where the data was cut out.
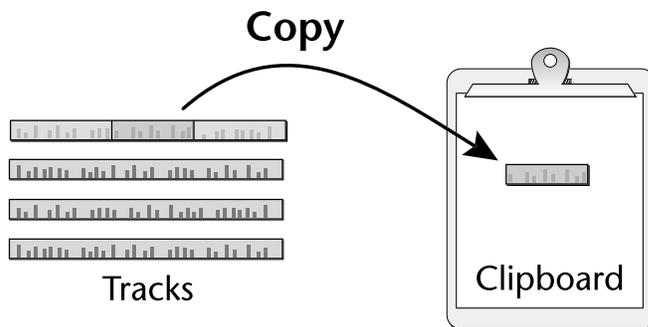
Copy

The copied section is placed on the clipboard leaving the track untouched.

▶ **To Cut or Copy a Section of a Track:**

1. **Select the pattern** you wish to edit.

2. Press the **Pattern Edit** button.

3. Scroll to the **Cut (Copy) Track to Clipboard** screen using the data entry control.

```
CUT TRACK TO CLIPBOARD
Track: 1    Bar:04    Len:07
```

4. **Select the track** to be cut or copied. The Home/Enter LED will be flashing once the cursor is moved to the lower line of the display.

5. Select the **Start Bar** and the **Length** (in bars) to be cut or copied.

6. Press **Enter** to cut (copy) the track. Press any other menu button to **Cancel** the operation.

Tracks can be freely cut, copied or pasted between songs and patterns.

Song Channel Assign

You can now assign your realtime song data to channels 1B-16B or to MIDI Out port A or B. The song track can be routed to: internal MIDI channels (either A or B), the external MIDI ports, both, or none. Multi A is routed to MIDI port A and Multi B is routed to MIDI port B, if "ext" or "both" is selected as a destination. Selecting "None" disables playback.

```
SONG CHANNEL ASSIGN
Channel: MultiA    Dest:both
```

▶ **To Assign the Song Track to the A or B channels:**

1. Press the Song Edit button.

2. Scroll to the **Song Channel Assign** screen shown above using the Data Entry control.

3. Select **MultiA** if you want the song track to go to channels 1A-16A or MIDI port A. Select **MultiB** if you want the song track to go to channels 1B-16B or MIDI port B.

4. Select the desired **destination** for the track (internal channels, external MIDI channels, both, or none).

5. Press the **Song Edit** button again to exit the module.
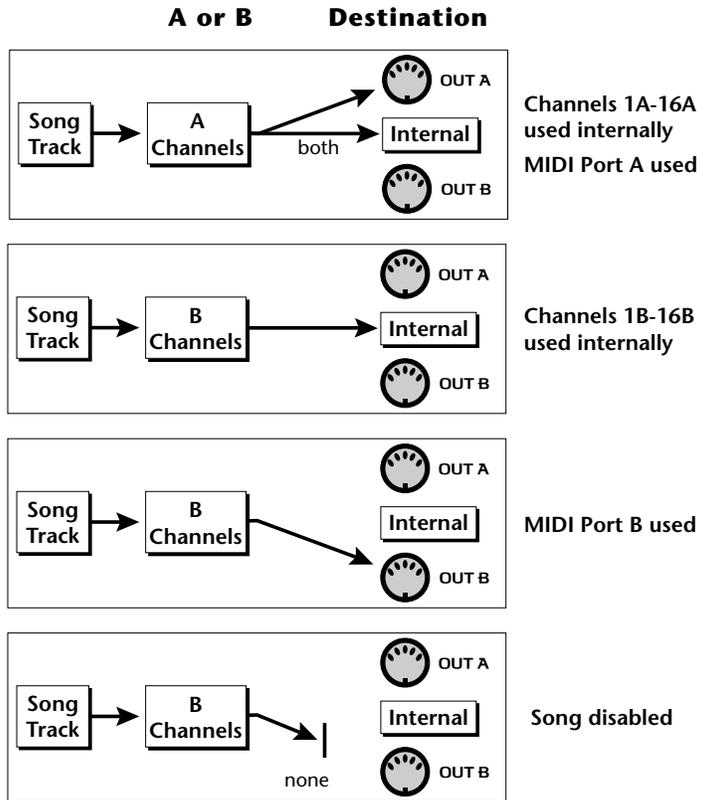
Paste Clipboard to Track

Once a track (or a section of a track) has been cut or copied to the "clipboard", it can be pasted into another track or pattern. The Paste operation *Merges* the clipboard data with the data on the destination track. It adds the new information to the existing data with the start of the data in the clipboard placed at the selected bar position.

Because of the data merging feature, the Paste operation can be used to "bounce down" multiple tracks to a single multichannel track. *See below.*
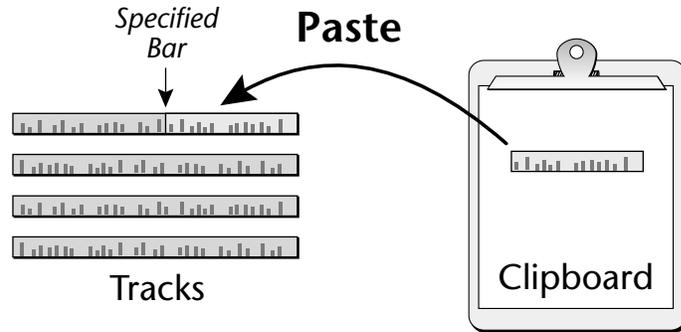
✎ *Tracks can be freely cut, copied or pasted between songs and patterns.*

▶ **To Paste the Clipboard into a Track:**

1. Press the **Pattern Edit** button.

2. **Cut or Copy** data to the clipboard.

3. Scroll to the **Paste Clipboard to Track** screen shown below using the data entry control.

```
PASTE CLIPBOARD TO TRACK
Track: 1      At Bar:06
```

4. **Select the track** where you want the clipboard data to be pasted. The Home/Enter LED will be flashing once the cursor is moved to the lower line of the display.

5. **Select the bar** where the clipboard contents will be pasted.

6. Press **Enter** to paste the data. Press any other menu button to **Cancel** the operation.

✎ *You will not hear the results of the Paste operation until the sequence cycles around. (Hint: Press RTZ)*

▶ **To Bounce Tracks:**

1. **Copy the first track** you wish to bounce.

2. **Paste the track** to the desired destination track.

3. **Repeat steps 1 & 2** for the other tracks you wish to bounce down.

4. Press the **Pattern Edit** button and scroll to the **Channel Assign** screen.

5. **Set the Track** containing all your bounced tracks **to MultiA**. (or **MultiB** if the original tracks were recorded using the "B" channels.)

Note List Editor

Individual MIDI notes in the pattern can be edited, inserted or deleted from this screen. **Place the cursor underneath the "Event Scroll Field" shown below and turn the data entry control to navigate through events.**

- Hold the **Enter** button and turn the **data entry control** to scroll through events when the cursor is on any other field

Event Scroll Field

Track Number   (scroll though events)   Time Location

```
ᵀ01   NOTE    <->     002.03.008
C01  C#1   v:100     dur:00.083
```

MIDI Channel   MIDI Note   Note Velocity   Note Duration
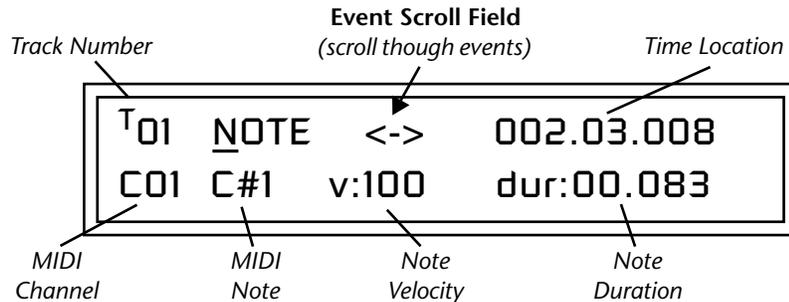
- **Erase** button - - - - - Erases the currently selected note.
- **Repeat** button - - - - Duplicates the currently selected note, allowing you to edit and create a new note.
  1) Press Repeat.
  2) Change the time, channel, or MIDI note.

Note: You cannot have two events with the exact same time and data in a pattern. Any duplicate events will be automatically deleted as soon as you increment the event or exit the screen.

▶ **To Edit a MIDI Note:**

1. **Select the pattern** you wish to edit.
2. Press the **Pattern Edit** button.
3. Scroll to the **Note List Editor** screen shown below using the data entry control.
4. Press the **Enter** button as prompted by the display to begin editing.
5. Select the **Track** that you want to edit using the Track/Channel select button near the LCD.

```
ᵀ01   NOTE    <->     002.03.008
C01  C#1   v:100     dur:00.083
```
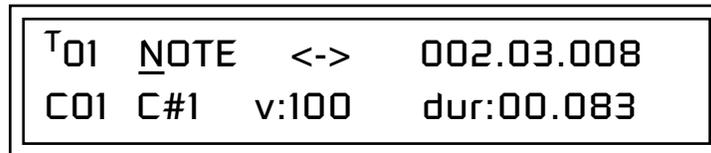
6. Press the **right Cursor** button to move the cursor underneath the Event Scroll field (<->).
7. Turn the **data entry control** to scroll through the event list and locate the event you want to edit.
8. Move the cursor to the data field you want to edit and make changes using the data entry control.
9. Press the **Pattern Edit** button to exit the Pattern Edit module.

You can edit notes and note velocity by playing the keyboard.

Event List Editor

Continuous controller, pitch wheel. mono pressure, poly pressure and program change MIDI messages can be edited, inserted or deleted using this menu. **Place the cursor underneath the "Event Scroll Field" shown below and turn the data entry control to navigate through events.**

The event list editor also allows you access to the *Conductor Track* which sets the tempo and meter for the pattern.

Hold the **Enter** button and turn the **data entry control** to scroll through events when the cursor is on any other field.

- **Erase** button - - - - - Erases the currently selected event.
- **Repeat** button - - - - Duplicates the currently selected event, allowing you to edit and create a new event.
  1) Press Repeat.
  2) Change the time, channel, or MIDI event type.
- **Note:** You cannot have two events with the exact same time and data in a pattern. Duplicate events will be deleted as soon as you increment the event or exit the screen.

Continuous Controller Edit
Continuous controller numbers 1-95 can be edited. Continuous controllers and Channel Pressure messages may range in value from 0-127.

Continuous Controller Screen

Track Number | Event Scroll Field *(scroll though events)* | Time Location

```
ᵀ01  EVENT   <->      002.03.008
C01   controller #1        v:52
```

MIDI Channel | Event Type | Controller No. Field | Event Value
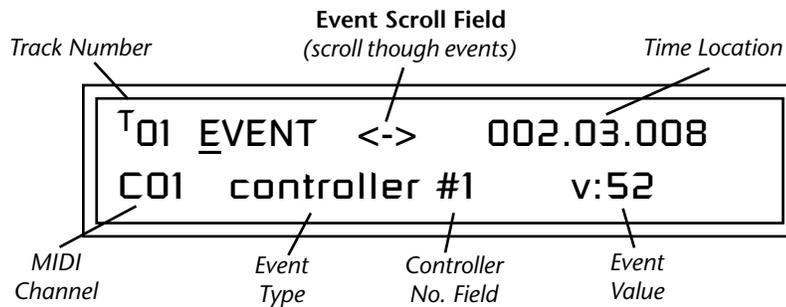
Pitch Strip Edit
Touch Strip messages are bidirectional and may range in value from -8192 to +8191.

Pitch Strip Screen

```
ᵀ01  EVENT   <->      002.03.004
C01   pitch strip:       -49
```

Bidirectional Pitch Value
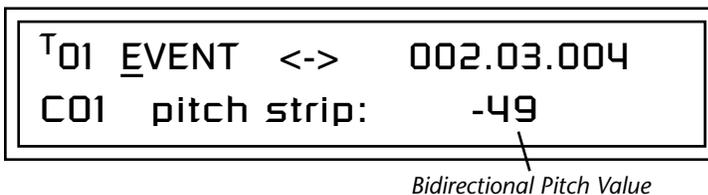
Poly Pressure Edit

Polyphonic pressure messages are assigned on a per note basis and have range of 0-127. XL-7 and MP-7 can generate polyphonic pressure messages, but cannot receive them.

Poly Pressure Screen

```
ᵀ01  EVENT  <->     002.03.004
C01   polypress:    C1      62
```

*MIDI
Note*   *Poly Pressure
Value*
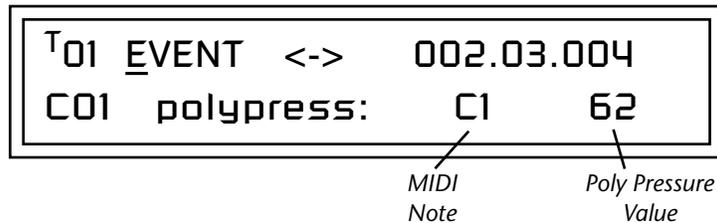
Program Change Edit

Program change numbers from 0-127, and on any bank number, can be inserted, deleted or edited in this screen. If you do not select bank numbers (off), the program change will be sent to the currently selected bank.

🔖 *In order to send program changes to external devices, the Track must be assigned to an "external" channel.*

Program Change Screen

```
ᵀ01  EVENT  <->     003.02.026
C01   prog: 10      m:off   l:off
```

*Program
Change
Number*   *Bank
Number MSB
cc:0*   *Bank
Number LSB
cc:32*
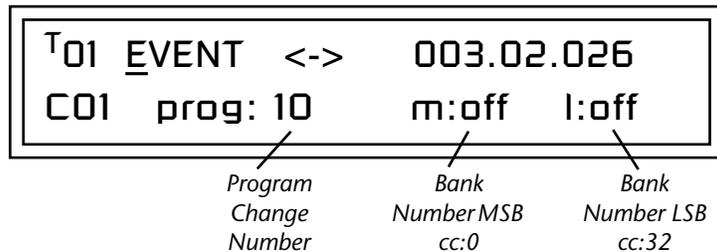
▶ To Edit a MIDI Event:

1. **Select the pattern** you wish to edit.
2. Press the **Pattern Edit** button.
3. Scroll to the **Event List Editor** screen shown below using the data entry control.
4. Press the **Enter** button as prompted by the display to begin editing.
5. Select the **Track** that you want to edit using the Track/Channel select button near the LCD.

```
ᵀ01   EVENT   <->     002.03.008
C01   controller #1      v:52
```

6. Press the **right Cursor** button to move the cursor underneath the **Event Scroll Field** (<->).

7. Turn the **data entry control** to scroll through the event list and locate the event you want to edit.

8. Move the cursor to the data field you want to edit and make changes using the data entry control.

9. Press the **Pattern Edit** button to exit the Pattern Edit module.

The Conductor Track (track 0)
The conductor track allows you to insert tempo and meter changes anywhere in the pattern. Select the track below track 1 and the first screen shown below will appear.

Conductor Track Screen

```
ᵀCT  EVENT  <->     003.01.000
C01  tempo:   138 bpm
```

```
ᵀCT  EVENT  <->     003.01.000
C01  meter:    04/4
```

▶ **To Insert a Tempo Change into the Conductor Track:**

1. **Select the pattern** you wish to edit.

2. Press the **Pattern Edit** button.

3. Press the (-) **Track/Channel** button until "CT" appears in the track field.

4. Press the **Enter** button as prompted by the display to begin editing.

5. Move the cursor to the lower line of the display and select **tempo**.

Track field   Time Location

```
ᵀCT   EVENT   <->     002.03.008
         tempo:  120 bpm
```

Tempo/Meter field   BPM field
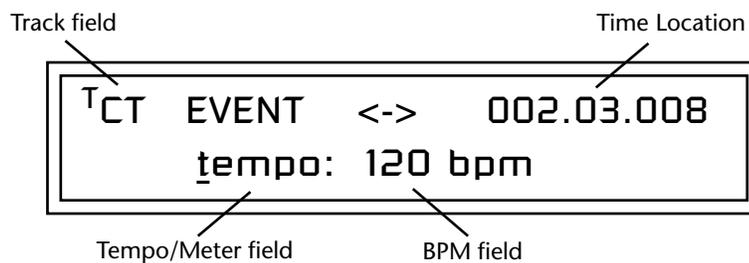
6. Move the cursor under the **bpm field** and set the tempo.

7. Set the **Time Location** where you want the tempo change to occur.

To Insert a new Event:
1) Press the Repeat button.
2) Modify the Time & Tempo.

8. If you want to add another tempo change, press the **Repeat** button on the front panel.

9. Change the **Time Location** and **Tempo.**

10. Press the **Pattern Edit** button to exit the Pattern Edit module.

▶ **To Remove or edit a Tempo Change from the Conductor Track:**

1. **Select the pattern** you wish to edit.

2. Press the **Pattern Edit** button.

3. Press the **(-) Track/Channel** button until "CT" appears in the track field.

4. Press the **Enter** button as prompted by the display to begin editing.

5. Press the **right Cursor** button twice to move the cursor underneath the **Event Scroll** field (<->).

6. Turn the **data entry control** to scroll through the event list and locate the tempo change you want to edit.

Event Scroll Field
(scroll though events)

```
ᵀCT  EVENT   <->     002.03.008
     tempo: 120 bpm
```
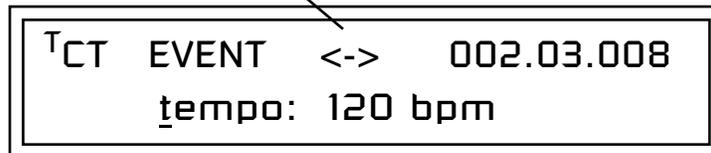
7. Press the front panel **Erase** button to erase the tempo event.

8. Simply change the **Tempo** or **Location** fields to modify the tempo or time of the event.

9. Press the **Pattern Edit** button to exit the Pattern Edit module.

▶ **To Insert or Edit Meter Changes:**
Meter changes are inserted and edited exactly like tempo changes.

Revert to Saved Pattern

Caution: *Never "Revert to Saved" while the sequencer is in record mode or the computer may crash.*

This screen allows you to discard any edits made to the pattern and restore the last saved version. This is not the same as an "Undo" function since Revert permanently discards any edits you have made since saving. This function removes the asterisk in the display that appears after you've edited the pattern.

```
REVERT TO SAVED PATTERN
000ᵒ A2DJ
```

Song & Pattern Event Source

A new "song & pattern" option has been added to the Song "Event Source" screen. The song track is much more flexible because of this feature, since both song and pattern events can be used on playback. (For example, you might want to use the song track for volume mixing.) This option allows presets to be correctly selected when using channels 1B-16B for song events.

Song / Pattern Edit Lockout

You must now be in the Song mode to enter the Song Edit menu. Likewise, you must be in Pattern mode to enter the Pattern Edit menu. Formerly you could edit songs while in pattern mode and vice-versa which could sometimes be confusing.

• If the Song Edit or Pattern Edit buttons doesn't work, change the Mode using the buttons underneath the LCD.

MIDI Control Commands

MIDI Song Position Pointer, Start, Continue, Stop commands are now received by XL-7 and MP-7.

• **Start, Continue & Stop** commands are always received.
• **Song Position Pointer** commands are received only when synced to MIDI clock.
• **Stop** - Stops from any transport state.
• **Start/Continue** - Only starts from the "stopped" transport state, and not from any "pause-record" modes.

MIDI Panic Button

• Pressing the MIDI and Home/Enter buttons simultaneously sends a MIDI "All Notes Off" and "All Sound Off" for all 32 MIDI channels. This immediately kills all sounding notes internally and over MIDI.

New Song Mode Realtime Record Screen

When you press Record once in Song mode, the following screen appears:

```
♩:150     - - - REC - - -    Bar: 001 . 1
Quan: off    Met: off      CntIn: 0
```

        Auto-   Metronome   Count-in
        Correct   on/off/rec   Bars
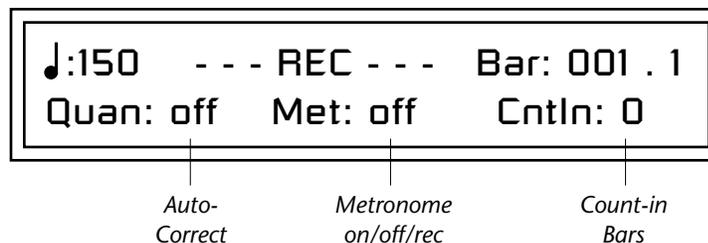
This screen is very similar to the pattern mode realtime record screen. You set the Quantization and Count-In for the Song Track just like for a Pattern track. See page 57 in the operation manual. You can now also turn the Metronome on or off in Song mode.

Aftertouch Curves

You can now select one of four different response curves to tailor the after-touch response to your playing style. You can also turn aftertouch off in this menu.

Because poly aftertouch generates mountains of MIDI data, it defaults to the off position. It's probably best to leave poly aftertouch off unless you are specifically using it, as it can clog the MIDI cable. XL-7 and MP-7 do not use poly aftertouch, even though it can be transmitted out over MIDI.

✏ *Aftertouch is also called "Pressure" in the Preset Edit, Cords menu.*

```
AFTERTOUCH CURVES
channel: 1          poly: off
```
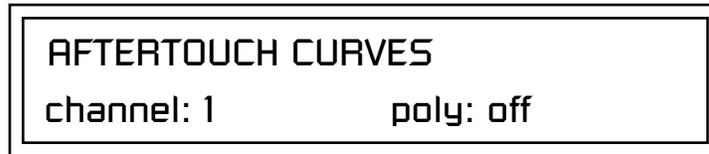
▶ **To Change the Aftertouch Curve:**

1. Press the **Controllers** button.
2. Scroll to the **Aftertouch Curves** screen using the Data Entry Control.
3. Move the cursor to the channel field and **select curve 1-4 or off**.
4. Press the **Controllers** button again to leave the menu.

Curve 1

Result Pressure

Played Pressure

Curve 2

Linear

Result Pressure

Played Pressure

Curve 3

Result Pressure

Played Pressure

Curve 4

Result Pressure

Played Pressure
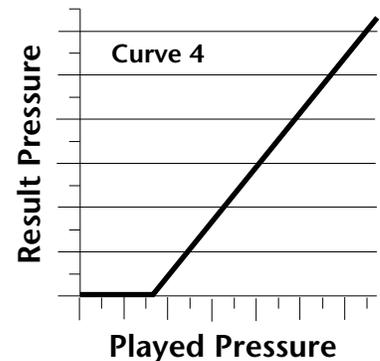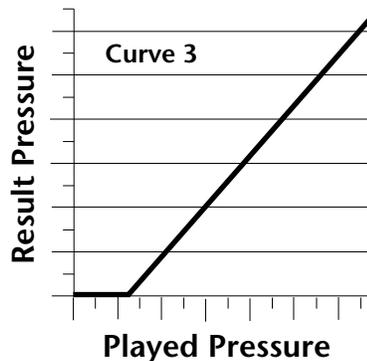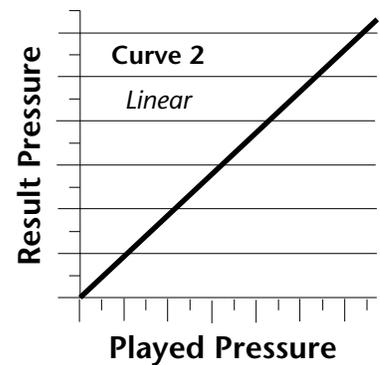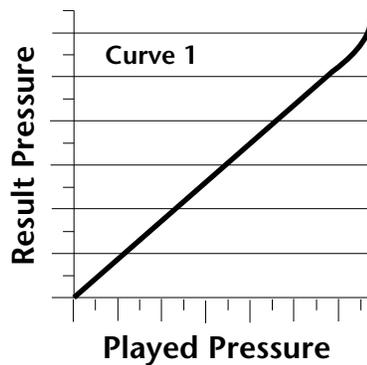
Local Control On/Off

Local Control is used to disconnect the keypad and controllers (knobs, touchstrip, footswitches) from the sound generating section. Even though disconnected from the internal synthesizer, the keypad and controllers are still transmitted over MIDI. Local Control is normally turned Off when recording into an external MIDI sequencer (set sequencer to Echo Thru). Played data and recorded data are merged in the computer sequencer and then sent back to the module. This feature can also be used if you want to control another MIDI sound generator from the rubber keypads without playing internal sounds.

```
LOCAL CONTROL ON/OFF
on
```
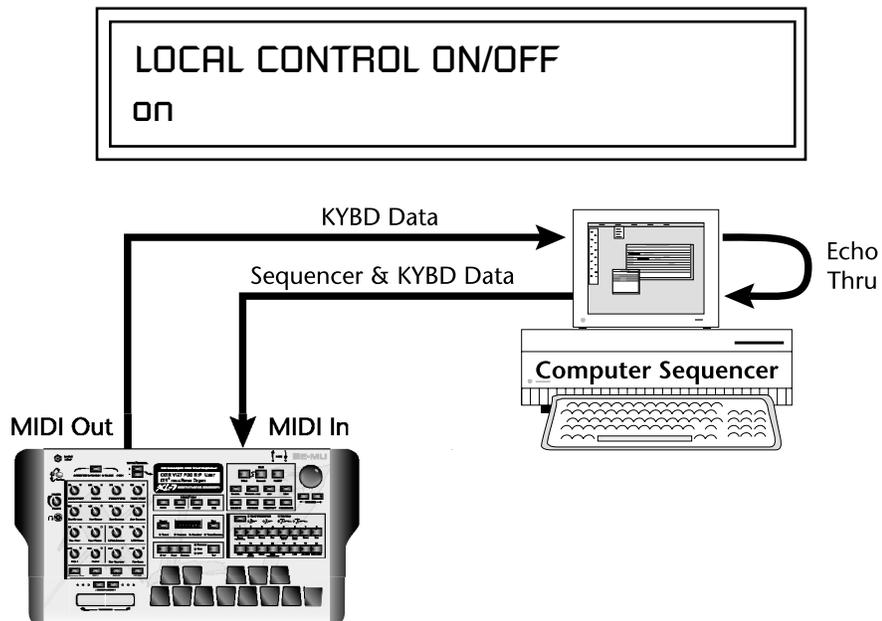

Turning Local Control Off allows you to use the Echo Thru feature on your sequencer while sequencing. In conjunction with Echo Thru, Local Control Off allows you to record into the external sequencer and hear the correct sounds whether you are recording or playing back the sequence.

Footswitch Jack Function

The two footswitch jacks on the rear panel can be programmed to perform a variety of functions. The footswitch jacks are designed to accept momentary footswitches which connect the tip and ring. The unit senses either normally-on or normally-off switches on power-up.

Each footswitch can be independently programmed. The following functions can be controlled via the footswitches.

```
FOOTSWITCH JACK FUNCTION
1: MIDI FtSw    2: Tap Tempo
```

- **MIDI Footswitch**   In this mode the footswitch is routed to the Patch-Cord in the Preset Edit, Cords menu. It is also transmitted out on the Footswitch Controller number as programmed in the Controllers menu.

- **Play/Stop**   Pressing the footswitch once activates the **Play** button on the front panel. Pressing the footswitch again activates the front panel **Stop** button.

- **Play**   Pressing the footswitch activates the **Play** button on the front panel. This works well in combination with the following function.

- **Stop/RTZ**   Pressing the footswitch activates the front panel **Stop** button. Pressing the footswitch again invokes the **Return-to-Zero** function.

- **Punch I/O**   When the sequencer is playing, the footswitch will activate the **Record** button in order to punch-in to record mode. Pressing the footswitch again will punch-out of record.

  When the sequencer is stopped, repeatedly pressing the footswitch cycles through the three record modes: realtime, grid & step record.

- **Tap Tempo**   Pressing the footswitch activates the front panel **Tap** button, allowing you to tap in the current tempo with your foot.

- **Channel +**   Pressing the footswitch increments the MIDI channel number.

- **Channel -**   Pressing the footswitch decrements the MIDI channel number.

- **Sequence +**   Pressing the footswitch increments the current pattern or song number. The next pattern will begin playing when the current pattern ends.

- **Sequence -**   Pressing the footswitch decrements the current pattern or song number. The next pattern will begin playing when the current pattern ends.

MIDI In Channels   This menu allows MIDI data received at the MIDI input port to control either the internal "A" or "B" channels. With this switch set to "B", you could play an external MIDI keyboard on channels 1B-16B while channels 1A-16A remain dedicated to the internal sequencer.

```
MIDI IN CHANNELS
0 to 16: A
```

Rechannelize MIDI In

👀 *Rechannelize MIDI In must be turned OFF in order to properly record multichannel MIDI data from an external source.*

This menu allows data on incoming MIDI data channels to be converted to the Basic channel. This allows an external MIDI keyboard to be used as an input device for sequence recording and auditioning without having to change the keyboard's transmit channel. When on, you're ready to begin recording on another channel by simply changing tracks. Or, to record another channel on a multitrack, just change the channel.

- **Off** . . . . .Disables the feature.
- **Always** . . . . . . .MIDI data is always converted to the Basic Channel.
- **On Record** . . . .MIDI data is only converted to the Basic Channel when the sequencer is in record mode.

```
Rechannelize MIDI IN
To Track Chan: on record
```

Keyboard Transpose

This option allows you to offset the transposition of the rubber keypads in semitone intervals. This is allows you to easily play in different keys with the one octave keypad and lets you access different groups of instruments in a drum map. The transpose range is ±36 semitones.

```
KEYBOARD TRANSPOSE
+00 semitones
```

Recording Realtime Controller Data into a Pattern

👀 *Too much controller information can clog the sequencer causing sluggish performance and sloppy timing. Use the "Thin Events" function to reduce the amount of controller data in the pattern.*

The instructions in the Revision-A operation manual are incorrect because they leave out the all important steps of setting the track to "Multichannel" (steps 6-9 below). Follow these instructions instead.

▶ **To Record Realtime Controller Data**
You can mix and embellish your patterns by recording continuous controllers along with note data.

1. Start by recording and saving a pattern.

Recording Quick Edits
The Quick Edit knobs are only active on the Basic Channel *(the channel currently displayed in the Preset View screen)*.

2. Select **Quick Edit** mode by pressing the Controller Function Select button.

3. **Select the channel** with the preset you wish to Quick Edit.

4. Practice your knob movements before recording by **Playing the pattern** and twisting the knobs.

5. When you're ready to record, press **Record**s while the sequencer is playing (to punch-in), then perform the knob movements.

Record Multitrack Volume and Pan Information

You can record Volume and Pan information for all 16 channels simultaneously by using Volume Knob mode. You'll be recording multichannel volume or pan data onto a track. The default channel assignment will rechannelize this data to a single channel. You must change this.

6. **Select a track** for the Realtime Controller data.

7. Press the **Pattern Edit** button and scroll to the "**Channel Assign**" page.

8. Set the track to **MultiA**. Now the track will record multichannel data.

9. Press the **Pattern Edit** button to exit the menu.

Automating the Volume of each Channel

10. Select **Volume** knob mode by repeatedly pressing the Controller Function Select button.

11. Select **Mix** View mode if you wish to view the volume settings.

12. Press the **Stop** button twice to make sure the pattern starts at the beginning.

13. Press the **Record** button in Pattern mode to get ready to realtime record. The Play button LED will be flashing.

14. Press the **Play** button to begin recording. The controller knobs now adjust the volumes of all 16 channels.

15. Press **Stop** when you're finished recording.

✎ *Use the "Erase cc# Events" function to erase controller data from the pattern.*

Real-time Panning

16. Select **Pan Knob** mode by pressing the Controller Function Select button.

17. Select **Mix View** mode by pressing the Mix button (if it's not already selected).

18. Turn the data entry control clockwise to select **Ch Pan** view.

19. Press the **Stop** button twice to make sure the pattern starts at the beginning.

20. Press the **Record** button in Pattern mode to get ready to record. The Play button LED will be flashing.

21. Press the **Play** button to begin recording. The controller knobs now adjust the pan positions of all 16 tracks.

22. Press **Stop** when you're finished recording.

Notes & Tips

The following are a couple of hidden tricks you might find useful.

• Press and hold **Play**, then press **Record** while a pattern is playing to jump right into Grid Record mode.

• Selecting the next pattern while playing does NOT change the tempo. This allows you to perform live pattern changes in one tempo. For a pattern to play its own tempo, either press stop 3 times (loading the initial setup data), or select the pattern while stopped.

Event Timing

The following information is intended for advanced users. If you are just getting started you can skip this section for now.

Songs and patterns both contain *pre-sequence setup* information that is loaded just before a song or sequence plays. This pre-sequence information is not reloaded when a pattern loops. Reloading this setup information each time a pattern looped would cause data clogging and possible timing errors in the sequence.

- The first two ticks (0 & 1) are reserved for pre-sequence setup information. Tick 0 is reserved for the internal pre-sequence setup information. **Tick 1 is used to place your own pre-sequence setup information so that it won't loop and cause timing errors.**
- Events (controller data, program changes, sysex, etc.) are played before Notes, even if they are located on the same numbered Tick. This is done so that volume changes and other programming information will be in place when the notes turn on.

Events	Notes		
tick 0		*Pattern/Song Setup Info*	**Pre-Sequence**
tick 1		*Reserved for User Events*	**Setup Info**
	tick 0		
	tick 1		
tick 2			
	tick 2		
tick 3			
	tick 3		
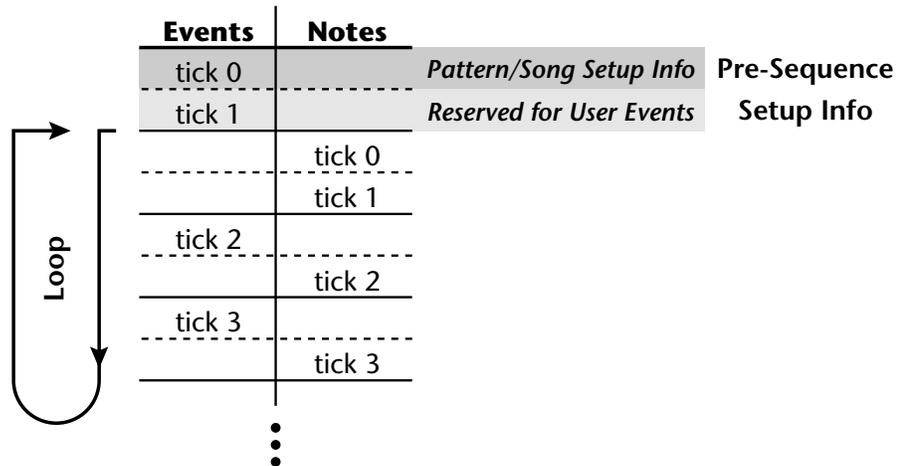
Loop

This chart shows how notes and other MIDI events are recorded at the beginning of a pattern or song.

Notes are played after other MIDI events. Ticks 0 and 1 are reserved for *pre-sequence setup* information which does not loop. Beginning at tick 2 of the pattern or song, information is recorded normally (events first, then notes).

Track Priority
The sequencer handles lower numbered tracks first. Therefore, you should put your most timing-critical data on low numbered tracks. Normally this will not be important since the sequencer timing is so good, but if you create very dense sequences, this information might be useful.