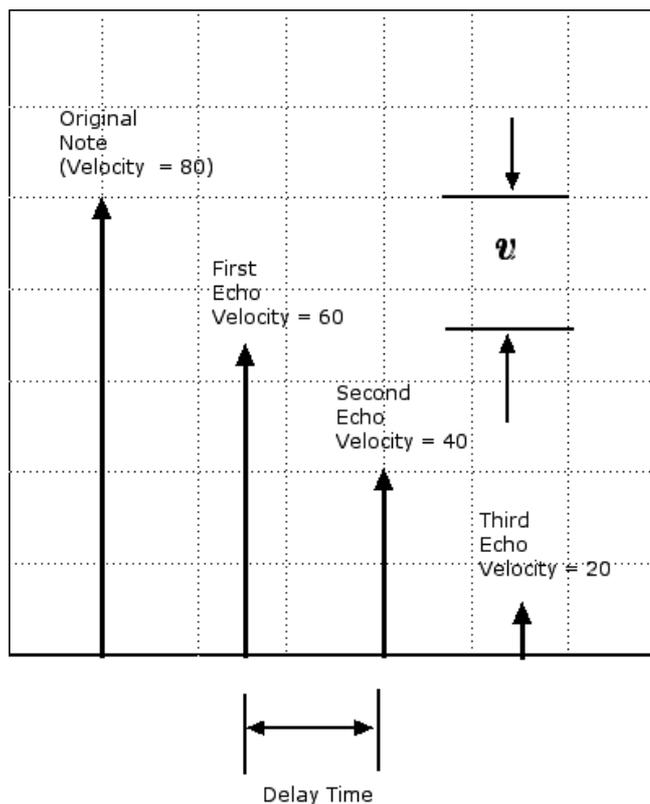


The MIDI Effects Processor

The **MIDI Effects Processor** uses the **Note** Pitch and Note Velocity of any MIDI messages sent to it to generate echoes. You can set the number of echoes, the time between the echoes and how the pitch and velocity of the echoes vary over time.

Before we go into the pages in detail, let's talk a little about how MIDI messages work. If you're already familiar with how MIDI works then you can skip this next couple of paragraphs.

MIDI Note messages consist of three essential pieces of information. Firstly, there's the MIDI channel, which is used to point the message at one or more specific MIDI instruments. Next, there's the Note Pitch, which is how low or how high the note sounds. Finally, there's the Note Velocity, which is how hard or how soft the note was played. A lower note velocity usually indicates a quiet note and a higher note velocity usually indicates a louder note.



The MIDI Effects Processor is only interested in MIDI Note On messages (not controller messages). MIDI Note On messages are basically just strings of numbers and the MIDI Effects Processor uses these numbers to generate echoes that are related to the original MIDI message.

The MIDI Effects Processor can create a series of echoes that are a semitone higher than the previous echo creating a glissando effect. Or it could create a series of echoes where the note velocity steadily decreases over time.

Page 1: Repeat/Note Parameters

```
60>Effects 1      Seq 01  
Rpt 03  Note +01 Vel -02
```

The **Repeat Count** (Rpt) is the number of echoes that the processor will generate per MIDI Note On message. So, if you set this parameter to 03 then you will hear the original note followed by three echoes. You can set a maximum of 16 echoes and a minimum of 1.

The **Note Parameter** tells the MIDI Effects Processor how to change the Note Pitch of every echo. The units are in semitones so, if you set a Note value of 1 (that is one semitone), then each echo will be pitched exactly one semitone higher than the previous echo.

Suppose that the sequence played a note pitched at C5 and the Repeat Count was set to 4. You would hear the original note, C5, but you would also hear C#5, followed by D5 followed by D#5 followed by E5, assuming of course that Force-to-Scale was not enabled.

The **Velocity** parameter tells the MIDI Effects Processor how to change the loudness of the note echoes. Positive values mean that subsequent echoes become louder, negative values mean that they are softer.

Page 2: Delay Time

```
61>Effects 2      Seq 01  
Delay 1.523s     MCLK 245
```

There are two parameters on this page though if you change one, you also change the other. The **Delay Time** is the time in seconds between the original MIDI Note On message and the appearance of the first echo. The **MCLK** parameter indicates the number of **MIDI Clock** messages that will elapse in the same time. (MIDI Clock messages are a standard means of synchronising one or more musical instruments.)

To change the Delay Time go to the Effects 2 page and use the *Enter* key to move the cursor until it sits just after the Delay field. The first character will then begin to flash. You can use the Data Wheel to change the value between 0 and 9 seconds. To change the tenths of a second value, press the *Select* button once and, as before, use the Data Wheel to change the value. If the sequencer is playing and MIDI Note on messages are being

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sent to the MIDI Effects Processor, then you should also hear the timing of any echoes changing.

You can change the time to within one thousandth of a second. When you reach this field, pressing the *Select* key moves you back to the start of the value whilst pressing the *Enter* key will move the cursor to the MCLK field.

```
61 Effects 2      Seq 01
Delay 0.500s     MCLK>048
```

As we said above, the MCLK parameter indicates the number of MIDI Clock messages that will elapse in the same time and MIDI Clock messages are a standard means of synchronising one or more musical instruments. This parameter is included because many musicians prefer to calculate delay times in terms of MIDI Clock messages.

MIDI Clock messages are created at a rate that is related to the current tempo and 24 MIDI Clock messages are generated for every quarter note. So, at a tempo of 120 beats per minute, the number of MIDI Clocks generated is 24 multiplied by 120 = 2880 per minute or 48 per second. To create a delay time of 1/4 note at a tempo of 120 beats per minute then you should set the MCLK parameter to 48. The corresponding delay time will be 0.5 seconds.

Page 3: Synchronisation

```
62>Effects 3
Sync On   Note Quaver
```

This page features two parameters, the **Sync** function and the **Note Delay Period**. Suppose that you want to set up a Delay Time that is exactly synchronised to the current tempo. You can use the **Sync** parameter to do just that. When the Sync parameter is on, then the Delay Time is calculated for you automatically and any echoes generated by the MIDI Effects Processor will always appear at an interval related to the Note Delay Period.

Note Delay Period is set using a range of Note intervals, which are listed below along with their abbreviations.

SemiQu	Semi-quaver (A sixteenth note)
DSemiQ	Dotted semi-quaver
Quaver	Quaver
dQuaver	Dotted quaver
Crotch	Crotchet

