

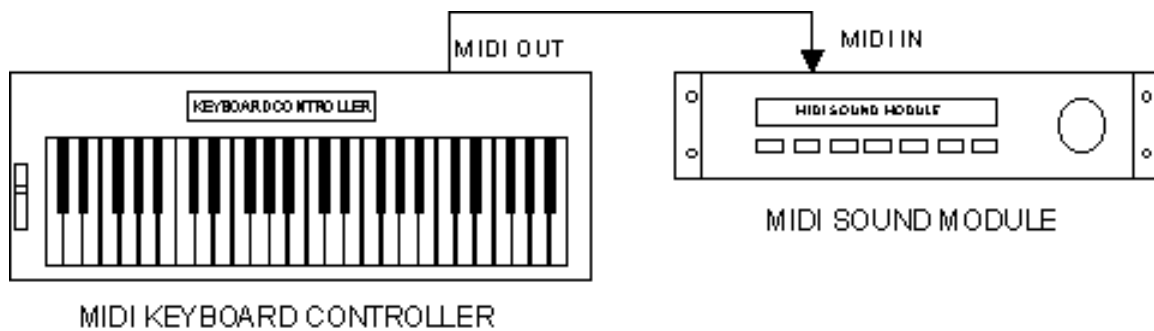
# Creative Music Programming 4a

Mike Cullen [www.83db.com](http://www.83db.com)

## MIDI

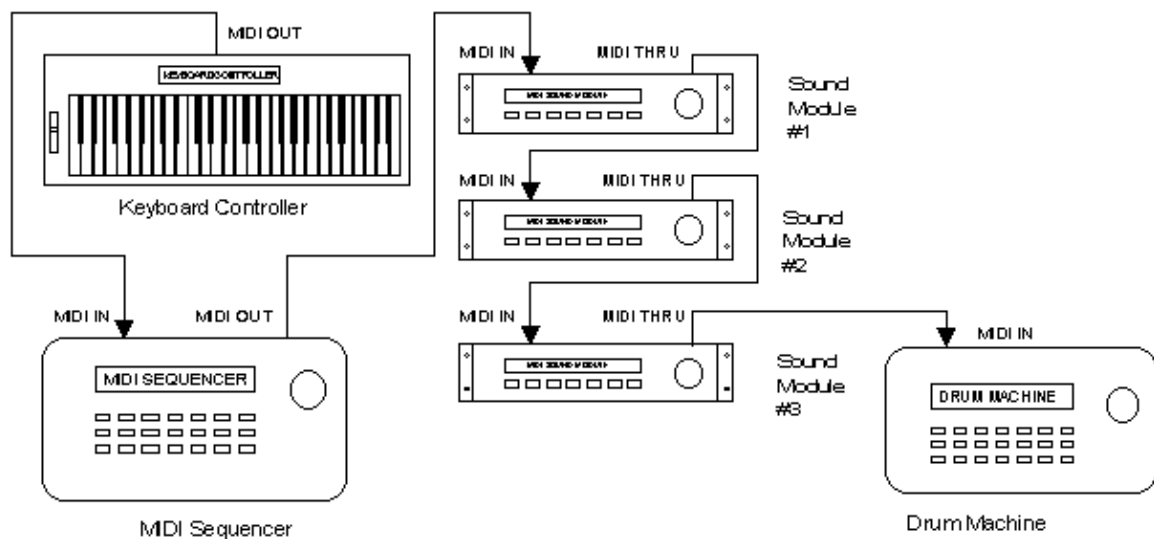
Read more about the **MIDI (Musical Instrument Digital Interface)** protocol at <http://www.midi.org/about-midi/aboutmidi3.shtml>

### A Simple MIDI System.



[http://www.midi.org/about-midi/tutorial/tut\\_fig1.gif](http://www.midi.org/about-midi/tutorial/tut_fig1.gif)

### An Expanded MIDI System.



[http://www.midi.org/about-midi/tutorial/tut\\_fig2.gif](http://www.midi.org/about-midi/tutorial/tut_fig2.gif)

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A MIDI Instrument will have A MIDI IN & MIDI OUT Socket. Most Instruments also have a MIDI THRU Socket for transferring MIDI data through one instrument into another as in a chain.

There are 16 MIDI Channels available on any one MIDI Port. Typically Channel 10 is often assigned to Drums. All Channels are freely assignable in terms of mapping MIDI data and individual sounds can be mapped or split across a range of notes for control from a sequencer or MIDI keyboard.

## MIDI Control Changes & Mode Changes Table

e.g.

Volume = Control # 7  
Pan = Control # 10  
All Notes Off = Control # 123

See more standard assignments here:

<http://www.midi.org/about-midi/table3.shtml>

## Tutorial on MIDI and Music Synthesis

<http://www.midi.org/about-midi/tutorial/tutor.shtml>

**\*\*Click on the link above to read about the different types of MIDI Messages:**

### **System Exclusive Messages –**

Often used to send data such as patch parameters or sample data between MIDI devices.

### **Channel Voice Messages –**

used to send musical performance information. The messages in this category are the Note On, Note Off, Polyphonic Key Pressure, Channel Pressure, Pitch Bend Change, Program Change, and the Control Change messages.

### **Channel Mode Messages –**

Channel Mode messages (**MIDI controller numbers 121 through 127**) affect the way a synthesizer responds to MIDI data.

### **MIDI File Formats –**

The specification for Standard MIDI Files defines three formats for MIDI files.

MIDI sequencers can generally manage multiple MIDI data streams, or "tracks".

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Standard MIDI files using **Format 0** store all of the MIDI sequence data in a single track.

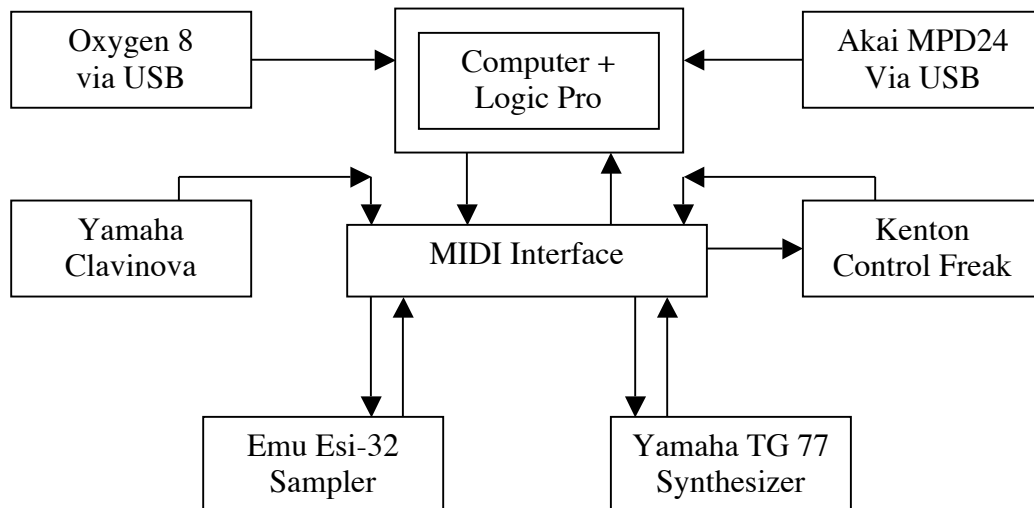
**TIP: Read about the split/demix by event channel in Logic Pro.**

**Format 1** files store MIDI data as a collection of tracks.

**Format 2** files can store several independent patterns. Format 2 is generally not used by MIDI sequencers for musical applications.

Format 1 files may be viewed and edited more directly, and are therefore generally preferred.

## Studio 4 MIDI Path



### **External MIDI Port Assignment:**

Port 2: Kenton Control Freak

Port 3: Emu Esi-32 Sampler

Port 4: Yamaha TG77 Synthesizer