

# MIDI

Musical Instrument Device/Digital Interface

- Originally used to allow one keyboard to control other keyboards on stage.
- You can have a single controller keyboard and several other inexpensive “keyboards without keys” ...sound boxes.

## Simple MIDI

- Instructions for what notes to play
  - How long is each note
  - How loud is each note
  - In general, which instrument to assign to the music
- Like a piano roll with feeling

## MIDI Has Expanded

- MIDI allows computers, synthesizers, MIDI controllers, sound cards, samplers and drum machines to control one another, and to exchange system data such as cues for a multimedia show.

- For a virtual instrument, it includes what note to play, how loud, how much attack or timbre, duration, etc.
- MIDI keyboards are common on stage, but you could get an inexpensive midi-usb keyboard, a \$40 adaptor to go to USB, and use it with virtual instruments in your computer software.

- MIDI connectors



- Recently USB is the common MIDI connector

- Almost all music recordings today utilize MIDI as a key enabling technology for recording music.
- Typical Example: midi can trigger drum beats (actual little sample recordings) on a track that are played at exactly the right timing, time after time.
- Excellent virtual instruments are available that sound so much like real instrument performances that it is difficult for almost anyone to tell. In a mix, then, it is even harder to tell!
- Modern computer sound cards are MIDI-compatible and can be capable of creating realistic instrument sounds, but older models sucked.
- Using virtual or software instruments in an application such as Garage Band is much better.

## MIDI Files

- The most compact of all music files
- Files have .mid extension
- Sending them to someone else to hear is chancy if you don't know what kind of instruments they have on their sound card or in software.

## New MIDI Files

- .KAR Karaoke files with lyrics
- .XMF eXtensible Music files
  - Can have MIDI info + Instrument data
- FIFF - RMID
  - Microsoft's version. MIDI files in a wrapper

## MIDI Timecode

- Synchronization of MIDI sequences is made possible by the use of MIDI timecode, an implementation of the SMPTE time code standard (movie industry). MIDI timecode has become the standard for digital music synchronization.
- Allows individual film/audio elements to time themselves when they are put together
- Included in a MIDI file. Not always needed.