VIRTUAL ROBOT FAQ

What is a MIDI effect?

A VIRTUAL ROBOT MIDI effect is a computer program that looks at MIDI notes and controls and modifies them in a manner that is musical. A MIDI note for example is a small digital pievce of information transmitted from (for example) your MIDI keyboard that represents the note you just pressed. This note information is not audio, rather just a number representing the note “C” for example. Included in the note information is how hard you pressed the key (called the velocity). MIDI effects look at the note and velocity information and modify it some way. A MIDI note enters the effect via a MIDI input “port” and the modified MIDI information exits the output port.

What is MIDI clock?

Music in general follows a beat or timing also uses a metronome to keep time. This beat is also called a clock, but in this case the beat is divided up into many small times called ticks. Like minutes are divided up into seconds. A piece of music may have a Beats Per Minute (BPM) called out at the beginning. DAWs (Digital Audio Workstations) have a BPM setting to specify how fast the music is played. Someone (or something) needs to keep time, cue the drummer…. The MIDI clock is a special digital signal in the MIDI stream that does exactly that. It is transmitted along with note information by devices that either generate or receive MIDI clock information. A MIDI effect if it needs timing can generate its own clock (called “Internal”). This clock can be used to synchronize (keep the same beat) other MIDI applications (like a DAW). Or conversely the DAW can generate a clock signal and the MIDI effect can use it to keep timing (called “External”). The clock has a speed or rate typically in BPM. 60 BPM is one beat per second. MIDI subdivides each beat by 24 ticks (a MIDI standard). A MIDI effect can then time notes in BPM/(24 \* 60) seconds. Just to put this in perspective if the MIDI ECHO effect has a BPM of 60, then the Echo Delay is 12, the delay is 60/(24 \* 60) \* 12 = 0.5 seconds.

What is a MIDI Controller:

MIDI digital information not only includes which note is played, and timing information, but also includes control change messages (CC messages). A control is for example a knob or button on your MIDI keyboard. The knob has a control number assigned to it. When the knob is rotated it sends out MIDI messages with the knob control number and where the knob is in its rotation. For example rotate the knob all the way counter-clock-wise and its position information is 0. Rotate it all the way clock-wise and its position is 127. Each knob has a unique number. VIRTUAL ROBOT MIDI effects can be controlled by CC change messages from your MIDI keyboard and your DAW.

What is MIDI Panic?

How do I connect MIDI on my Windows PC?

MIDI effects to connect with a DAW for example require a MIDI connection that is running on your Windows PC. Windows does not create this on its own. This can be accomplished with free programs that create what are called “Virtual Ports”. A Virtual Port shows up in the list of input and output MIDI ports and can be used to connect MIDI applications together. A Virtual MIDI Port is also required to connect two MIDI effects together. Below are two free applications for your Windows computer that create Virtual MIDI ports.

The following virtual MIDI ports programs are available for free:

**Loopbe1**  
<http://www.nerds.de/en/download.html>  
This program is freeware for 1 virtual port. There is also a paid version that offers 30 ports.

**LoopMIDI**  
[http://www.tobias-\_erichsen.de/software/loopmidi.html](http://www.tobias-erichsen.de/software/loopmidi.html)  
This is a freeware program that offers a custom number of virtual ports. Setup is a little bit more complicated than for loopbe1, since you need to create the ports yourself from LoopMIDI’s control panel.

Can I run more than one MIDI effect at the same time?