

BitControl

Remote Editor for Bit 01 and Bit 99

User Guide

BitControl Users Guide © 2006 by Michael Ashton

Introduction

BitControl is a remote editor for the Bit 01 and Bit 99 synthesisers.

BitControl is available as an Audio Unit (Mac OS X) or VST (Mac OS X, Windows) plugin. You can use it from within a host application, and sound data can be kept with project data, so sounds can be automatically restored when a project is loaded.

How it works

Most patch librarian programs attempt to mirror the content of the synthesiser they control. They provide an editor not only for single programs, but for the entire program bank of the device.

BitControl does not perform memory bank management. Programs are always loaded to one location, which is constantly overwritten and reselected. This makes your Bit operate like a synthesiser plugin – no memory bank management is needed. (And for most purposes, you need never replace the memory battery again!)

BitControl transmits patch parameters in a somewhat unusual fashion. The Bit has a relatively simple MIDI implementation, and understands only messages containing entire programs; it does not provide MIDI messages for altering one single parameter. Therefore, each time you edit a parameter, BitControl transmits the entire program to the Bit, followed by a program change.

Because of this system, each time you make a change to a patch, any playing notes are stopped, even if you are holding down a key. You cannot, for instance, hold down a note and sweep the filter, and hear the changes in real time.

Although program messages are not very large (80 bytes), BitControl limits the transmission rate to avoid flooding the MIDI port with data.

Features

- Graphical, near-real-time editing for all parameters in a single Bit 01/99 program
- AU or VST plugin: program data can be saved and restored by the host
- Programs are saved as standard MIDI files
- Imports and exports raw sys-ex data

At present, BitControl supports only single programs. Future versions will support double and split programs.

Requirements

- Bit 01 or Bit 99 synthesiser (the Bit One cannot receive sysex, so it cannot be used with BitControl)
- Computer running Macintosh OS X 10.2 or later, or Windows 2000 or later
- MIDI interface
- VST or Audio Unit host program

Installation

Mac OS X Audio Unit

1. Download and open the BitControl disk image. The Audio Unit is the file called `bitcontrol.component`.
2. Copy `bitcontrol.component` to either of the following folders:
 - If you want the plugin to be available to all users, copy it to `/Library/Audio/Plug-Ins/Components`. (You will need administrator privileges to do this.)
 - If you want the plugin to be available only in your account, copy it to `/Users/your-user-name/Library/Audio/Plug-Ins/Components`.

Mac OS X VST

1. Download and open the BitControl distribution disk image. The VST plugin is the file called `bitcontrol.vst`.
2. Copy `bitcontrol.vst` to either of the following folders:
 - If you want the plugin to be available to all users, copy it to `/Library/Audio/Plug-Ins/VST`. (You will need administrator privileges to do this.)
 - If you want the plugin to be available only in your account, copy it to `/Users/your-user-name/Library/Audio/Plug-Ins/VST`.

Windows VST

1. Download and extract the BitControl archive. The VST plugin is called `bitcontrol_vst.dll`.
2. Copy `bitcontrol_vst.dll` to the directory you use for VST plugins. On most systems, this is `c:\Program Files\VSTPlugins`.

Getting started

Setting up the Bit

Warning: If you have a Bit 99, and you have patches in it that you want to keep, save them before using BitControl (preferably using MIDI sysex).

BitControl always overwrites program location 1, and later versions will also overwrite locations 2 and 74. (The Bit 01 has no MIDI output, so you cannot save patches through MIDI, but you can back them up using the tape interface.)

1. Note the MIDI channel number your Bit is using (parameter 73).
2. Turn off the write-protect switch. On the Bit 01, the switch is on the back panel of the unit; on the Bit 99, it is on the rear panel.
3. Turn on program change reception (parameter 71).

Starting and setting up BitControl

1. Load an instance of BitControl.
 - There are many different hosts available, and each has its own method for selecting and loading plugins. See the documentation for your host for information on how to load plugins.
 - Although BitControl produces no sound, it is configured like a synthesiser plugin. It accepts MIDI input, has no audio input, and has two channels of audio output, which are always silent. The audio outputs are in place to satisfy certain hosts, which expect them.

- BitControl does not produce MIDI output within the host. Though VST 2.4 provides for this, very few hosts support it. BitControl uses system MIDI outputs directly.
2. Open the BitControl editor panel.
 - See the documentation for your host program for information on how to open a plugin editor.
 3. Click the Options box. The Options dialog appears.
 4. Select the appropriate model – Bit 99 or Bit 01 – for your Bit.
 5. Select the MIDI channel and system port of your Bit.

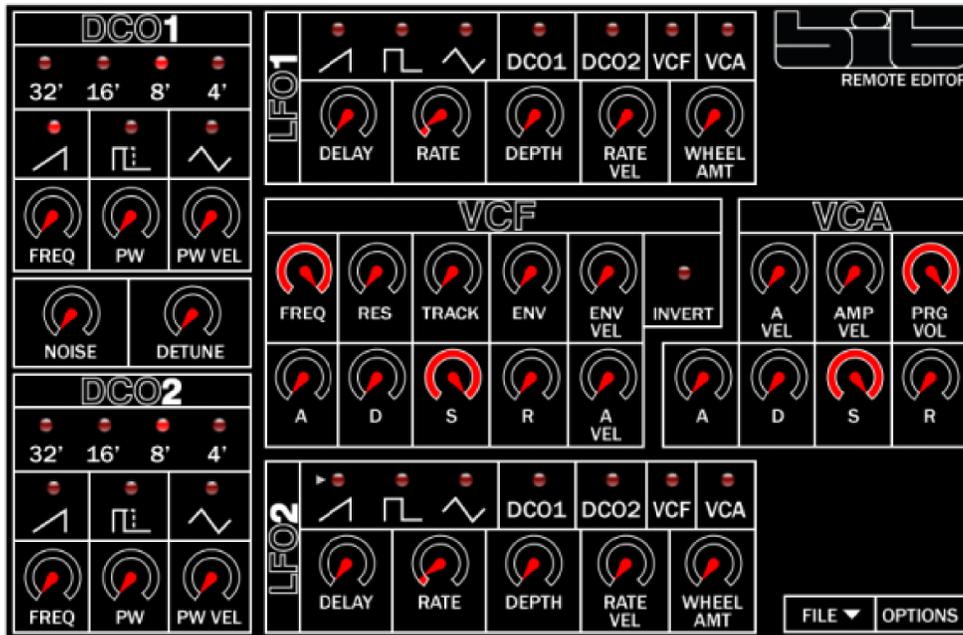


Figure 1: BitControl editor

Operation

Editor

Figure 1 shows the BitControl editor.

Bit sound editing is not discussed here. See the owners manual for your Bit for information on how the parameters work.

File menu

Load program ...

Loads a BitControl program file from disk.

BitControl program files are Standard MIDI Files with a special MIDI event. BitControl will not load Standard MIDI files that do not have this event.

Standard MIDI files usually have the extension .smf.

Save program as ...

Saves the current program as a Standard MIDI File.

BitControl program files are Standard MIDI Files. If you play these files to a Bit using a suitable MIDI file player, it will receive the program contained in the file, just as though BitControl had transmitted the program. (The Bit must be the same model selected in the Options dialog when the program was saved.)

A BitControl MIDI file has a special event containing metadata used by BitControl. Properly written MIDI file players and sequencers will ignore this event.

Options dialog

The options dialog is shown in Figure 2. To make it appear, click OPTIONS on the editor. To close it, click the red X in the title bar.

The options set here are saved in the host for each plugin instance.

MIDI channel

This selects the MIDI channel used by BitControl. It must match the MIDI channel used by the Bit. (On the Bit, this is parameter 73.)

Model

If you have a Bit 01, set this to "Bit 01". If you have a Bit 99, set this to "Bit 99".

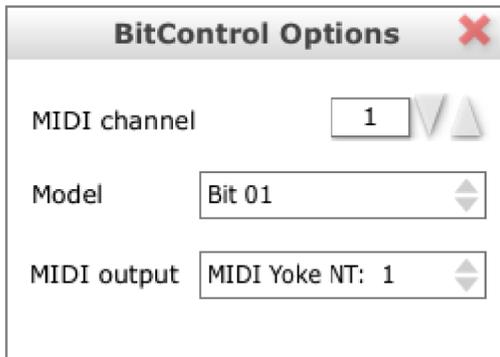


Figure 2: Options dialog

Although the message format is the same for the two synthesisers, a Bit 01 will not accept messages meant for a Bit 99, and vice-versa.

MIDI output

This selects a system MIDI out port for transmitting MIDI messages.

When BitControl is first loaded, this is set to "None", and BitControl transmits no MIDI.

BitControl saves the name of the port between sessions. When you load BitControl again, it looks for a port with the same name. If it can't find the port, it reverts to "None".

If BitControl isn't transmitting MIDI after a reload, make sure this setting hasn't returned to "None".

Host integration

State preservation

Most Audio Unit and VST hosts can save the state of plugins in their files.

This means that for most hosts, you can load BitControl into a track, edit a patch, save the song file. If you load the song file later, the host will load the last saved settings into BitControl. You do not need to save a program file to disk – everything is preserved in the host.

BitControl is designed for backward compatibility with its own data. Every future version will be able to load data from every previous version.

Automation

Every sound parameter in BitControl is available in the host for automation.

Note, however, that the Bit turns off playing notes when it receives a new setting from BitControl. This means that you cannot use automation to do a filter sweep, for example.

Also note that each parameter change is 80 bytes, and BitControl thins the data; it will transmit no more frequently than every 100ms.