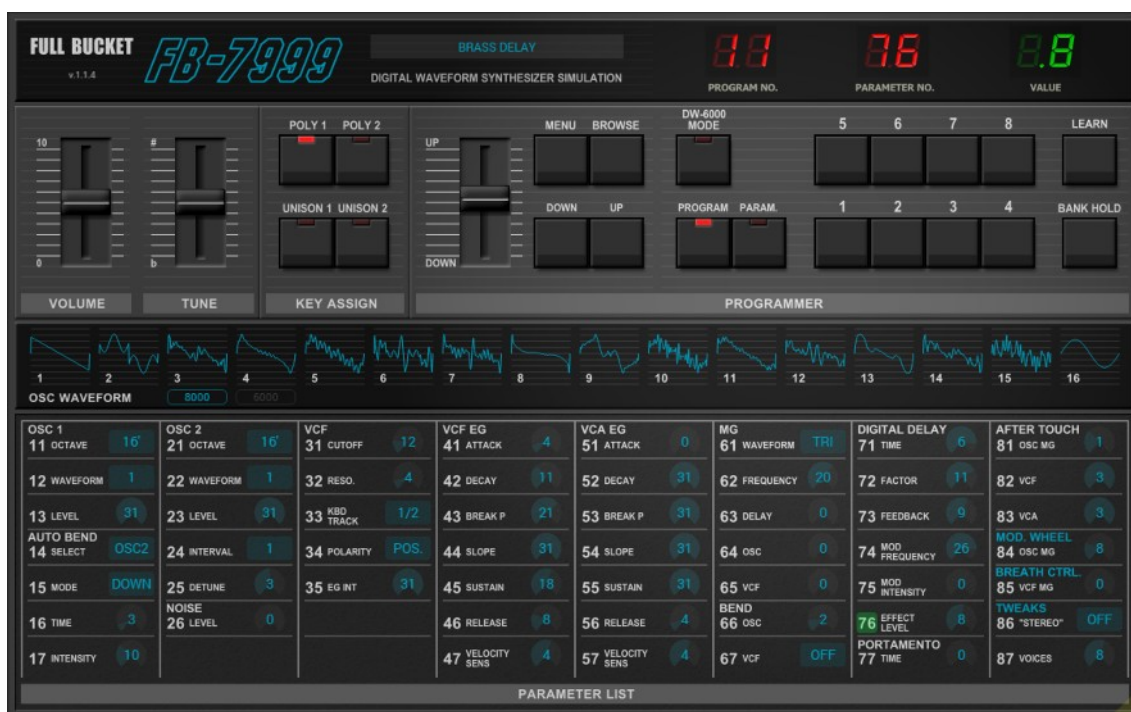# FB-7999

Digital Waveform Synthesizer Simulation

Version 1.1

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Reference sampling and Beta testing by
Gerald Murer and Ben Martin

Additional Beta testing by kraftraum soundcloud.com/kraftraum

Table of Contents

Introduction

FB-7999 is a software plug-in for Microsoft Windows (VST2/VST3) and Apple macOS (VST2/VST3/AU) simulating the KORG® *DW-6000* and *DW-8000* synthesizers from the 1980s. It is written in native C++ code for high performance and low CPU consumption. The main features are:

- Two digital oscillators with 16 + 16 different waveforms
- Poly and Unison modes
- Built-in pseudo-stereo delay
- SysEx data communication, import and export
- Extended polyphony (up to 64 voices)
- MTS-ESP (https://oddsound.com/) dynamic micro-tuning support
- Resizable user interface (not "N" version)
- All parameters can be controlled by MIDI controllers
- Plug-in supports Windows and macOS (32 bit and 64 bit)

FB-7999 is based on the **iPlug2** framework maintained by **Oli Larkin and the iPlug2 team**. Big thanks, guys!!! Without your work it would not have been possible to create a resizable *FB-7999* user interface.

To resize the plug-in you just grab the yellow triangle at the bottom right of the *FB-7999* window and drag it. You can save the current window size using the menu entry "Save Window Size" in the *Options Menu*.

If you have trouble with the standard version of *FB-7999*, please install the (sound-wise identical) "N" version of the plug-in which is based on the original **iPlug** framework.

Acknowledgments

Gerald Murer has provided tons of samples of his *DW-8000*.

Ben Martin has provided tons of samples of his *DW-6000*.

Without these samples and your support *FB-7999* would not have been possible.

Furthermore, Ben, Gerald and **kraftraum** (https://soundcloud.com/kraftraum) did the Beta testing – thank you so much, my dear friends!!!

Oli Larkin and the iPlug/iPlug2 team.

Laurent Bergman for translating the *Full Bucket* manuals to French.

Some Words About The *FB-7999*

Somehow I think I have to write them down. Skip this section if you feel TLDR.

Read This First

I am aware that a simulation of well-known devices such as the *DW-X000* series will provoke mixed emotions. Thus, let me state some facts:

- I did own a *DW-8000* in the 1990s so I do know what I am talking about.
- I know that *FB-7999* does not sound exactly like the *DW-8000* (thus the "*7999*") nor the *DW-6000*. But it is close enough for me (not necessarily for you, though).
- Yes, the filters of the hardware (realized with custom NJM2069 chips) sound different than the digital filters in *FB-7999* (in my humble opinion: Not necessarily better but different nonetheless).
- I purposely designed the user interface of *FB-7999* exactly the way it is although it does not meet nowadays plug-in standards. Welcome to the 80s!
- I intentionally did not add the *DW-8000* arpeggiator to *FB-7999*.
- If you are an owner of the original hardware you still might want to use *FB-7999* as a software editor.
- Yes, a lot of people were actually *asking me to do* this simulation. ☺

Now it is up to you to keep *FB-7999* on your hard drive or to move it to the trash bin.

The Hows And Whys

As stated above, many folks asked me to build a *DW-8000* simulation (someone even suggested that for reference purposes I could buy a *DW-6000* offered on a famous internet sales platform). Originally, I was not very fond of the idea (both building and buying it!) because I cannot say that I really miss my old *DW-8000* etc. In fact I thought it would be impossible to simulate the *DW-8000* because I did not have any reference about the mapping of the *abstract* parameter values to *physical* parameter values (How many Hertz is a cutoff frequency of 25? What is 13 in terms of attack time?). But it went the same way as with *Fury-800* and I could not stop myself from starting to work on it*…*

In the mid of August 2021 **Gerald Murer** from Austria just wrote me a mail where he stated that *WhispAir* can sound pretty close to his *DW-8000.* I also remembered that **Ben Martin** from Portugal (who suggested & helped me to do *SequencAir*) once said that he was in possession of a *DW-6000*. So I asked both of them whether they would be so kind to provide me with samples of their devices – a tedious and boring work. But they agreed and did!

It is important to understand that *FB-7999* is not a sample player. Instead I used the samples that Ben and Gerald sent me to reconstruct the sound parameters of the original hardware. Plus there are numerous places in the web where one can find additional reference data and sounds.

General Operation

If you are familiar with the *DW-X000* series, most of the following will be familiar, too. However, since *FB-7999* aims to simulate both the *DW-6000* and the *DW-8000* it is worth while to read the next sections.

The DW Modes

Although the *DW-6000* and the *DW-8000* are pretty similar devices there are certain differences which are listed in the following table. As you can see the *DW-6000* features are a subset of the *DW-8000* features with the exception of the Chorus.

Feature	*DW-6000*	*DW-8000*	*FB-799*
polyphony	6 voices	8 voices	8 to 64 voices
waveforms	8	16	16 + 16
Auto Bend	no	yes	yes
MG waveforms	1	4	4
velocity	no	yes	yes
aftertouch	no	yes	yes
effects	Chorus	digital delay	digital delay

But that's not the end of the story: The shape of the envelopes of both machines as well as many of the parameter ranges are different, too. Thus a program with identical settings on a *DW-6000* will sound different on a *DW-8000* and vice versa!

This is where the "*DW-6000* Mode" of *FB-7999* comes into play. It is activated using the *DW-6000 MODE* button (the "*DW-8000* Mode" is active if the LED of this button is off) and it switches the internal sound engine respectively.

All the additional features of the *DW-8000* are still in place, and you can even decide which set of waveforms you want to choose. In the user interface, parameters of the *DW-8000* which are not available on the *DW-6000* are displayed in orange instead of the common light-blue, but they are still functional.

Chorus vs. Digital Delay

FB-7999 can emulate the Chorus effect of the *DW-6000* using a tweaked version of the digital modulation delay of the *DW-8000*. This means that the internal engine of the delay changes with the selected mode, too. However, there is no automated change of parameters setting the delay to a Chorus except when you load a *DW-6000* MIDI SysEx data dump (see section *Importing SysEx Data*) or initialize a *DW-6000* program (see section *Options Menu*).

Selecting a Program

FB-7999 has 64 programs numbered in a weird fashion from 1-1 to 8-8. The first digit is called the *bank*; there are 8 banks (1 to 8) having 8 programs (1 to 8). To select a program from the front plate the *PROGRAM NO.* button has to be activated.
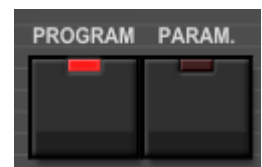
Now you can dial in a new program number using the number pad. When you have pressed the first button (the bank number) the display will show something like Ч⁻ at *PROGRAM NO.* with a dash indicating that you have to press another number button for the program. Using the *BANK HOLD* function you can "fix" the bank: Pressing a number button will then immediately select the respective program of that bank. Note that in *BANK HOLD* mode the dot at *PROGRAM NO.* will be lit, for example like Ч.Ⴈ instead of ЧႨ. You can also change the program by using the *DOWN* and *UP* buttons. *FB-7999* will then step downwards or upwards through the programs.

The *FB-7999* adds a field for naming programs (which is not possible on the *DW-X000* series) and optional buttons to step through the programs – this is a convenience function because in parameter mode (see below) you cannot change the program directly. To activate these button you have to check the "Show Prg. Up/Down Buttons" entry in the *Options Menu*.
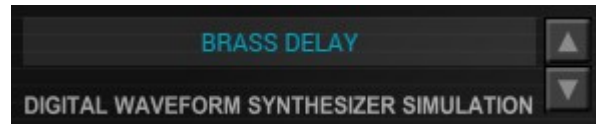
Editing Parameters

Clicking the *PARAMETER NO.* button switches into parameter mode where you can edit the individual parameters of a program. Each parameter has a number similar to the program numbers which can be determined by looking at the lower part of the front plate (for example *VCF Cutoff Resonance* has the number Ⴈ�端). The display will show the number at *PARAMETER NO.* and its value at *VALUE*.

To change the value of a parameter you have to use the *DOWN* and *UP* buttons or the edit slider (see below)*.* If the value of the parameter has changed, the display will show a dot at *VALUE*.

This is a rather tedious procedure when creating new sounds. With the *FB-7999* you can directly select and edit a parameter by clicking into the parameter list at the front plate. This will either show up a value knob-like control that can be moved up and down using the mouse or a switch-like control.

The Edit Slider

The *DW-8000* (but not the *DW-6000*) has a cool performance feature: When writing a program it also stores the parameter that is currently selected for edit. The next time you select the program, the parameter to edit will be restored as well. This way you can choose the most important parameter per program for direct access.
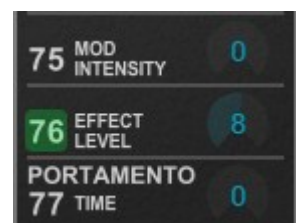
FB-7999 visualizes this "edit parameter" with a green marker. To set the edit parameter just right-click it in the parameter panel.

MIDI Learn And The Config File "fb7999.ini"

Every parameter of *FB-7999* can be controlled by one MIDI controller. If you want to change the assignment of MIDI controller (CC; *MIDI Control Change*) to *FB-7999* parameter the *MIDI Learn* function comes in quite handy: Just click the *MIDI Learn* button in the Control Section (caption turns red) and wiggle both the MIDI controller and the parameter you want to assign (you can abort *MIDI Learn* by clicking the button again). If you want to unlearn the assignment, right-click the *MIDI Learn* button (the label now reads "UNLEARN") and activate it. Now wiggle the MIDI controller or the parameter that you want to unlearn. To save the controller assignments use "Save Configuration" in the *Options Menu* (see below); they are stored in the fb7999.ini configuration file. The exact location of this file depends on your operating system and will be displayed when you click on "Reload" or "Save Configuration".

Tuning And Micro Tuning

The master tune of *FB-7999* can be set using the *TUNE* silder control. Furthermore, *FB-7999* is compatible with MTS-ESP by ODDSound, a very cool framework for dynamic micro tuning.

For more (and how to get) MTS-ESP plug-ins see https://oddsound.com. If MTS-ESP is active, the current tuning name will be displayed as a tooltip of the *TUNE* slider.

Loading *DW-8000* Tape Dumps

Starting with version 1.1.4 you can load *DW-8000* "tape dumps" that available as WAV files – this will import a whole bank of 64 programs. Note that *DW-6000* tape dumps do not work.

Warning: There is no guarantee that the tape dump import will be successful as it heavily depends on the quality of the recorded audio stream!

Importing SysEx Data

You can import a *DW-6000* or *DW-8000* MIDI System Exclusive (SysEx; SYX) data file by clicking "Load SysEx File" in the *Options Menu* (see below). Whatever is in the file will be executed by *FB-7999*.

Typically a SysEx file contains a single program dump – in this case the parameters of the current program will be overridden. Since there is no *bank* dump defined in the *DW-X000* world, importing a SysEx files containing exactly 64 program dumps will override the contents of all 64 programs (before doing that the user will be prompted if he wants to continue). Else if the SysEx data contains multiple program dumps, the programs will only be overridden if a program dump is followed by a *Write Program* SysEx command.

Note that the DW mode of a *FB-7999* program will be set automatically with respect to the SysEx data format which is a bit different for the *DW-6000* and the *DW-8000*. Furthermore, importing *DW-6000* program data will default parameters that are not available on the original hardware to "reasonable" values. This includes setting the digital delay to a Chorus effect.

Exporting SysEx Data

You can export a *DW-6000* or *DW-8000* MIDI System Exclusive data file by clicking "Save SysEx Program File" or "Save SysEx Bank File" in the *Options Menu*. The bank file will contain a dump of all 64 programs and can be imported as described above.

Receiving And Sending SysEx Data

Any (valid) SysEx data that is sent to *FB-7999* will be handled appropriately – program dumps and parameter change requests are executed immediately.

It is also possible to send a program dump to the MIDI output of *FB-7999* using the "Send SysEx Program Data" command in the *Options Menu*. Note that the SysEx format will be determined by the current DW mode: If "*DW-6000* Mode" is active then the SysEx format will follow the *DW-6000* convention and cannot be used for a *DW-8000* device (and vice versa for the "*DW-8000* Mode").

If you want to send a SysEx command for any parameter change within the *FB-7999* user interface you have to check the menu entry "Send Parameter Change SysEx" in the sub-menu "Global MIDI Settings…" of the *Options Menu* (again the SysEx format follows the current DW mode). This way you can use *FB-7999* as a software editor for your *DW* hardware.

Options Menu

When clicking on the *MENU* button, a context menu opens with the following options:

Copy Program	Copy current program to internal clipboard
Paste Program	Paste internal clipboard to current program
Init DW-6000 Program	Initialize the current program in *DW-6000* mode
Init DW-8000 Program	Initialize the current program in *DW-8000* mode
Load Program	Load a program file containing a program to *FB-7999's* current program
Save Program	Save *FB-7999's* current program to a program file
Load Bank…	
Load FXB Bank File	Load a bank containing 64 programs into *FB-7999*
Restore DW-8000 Factory Bank A	Restore the 64 programs of the original *DW-8000* factory bank A
Restore DW-8000 Factory Bank B	Restore the 64 programs of the original *DW-8000* factory bank B
Restore DW-6000 Factory Sounds	Restore the original 64 *DW-6000* factory sounds
Save Bank	Save *FB-7999's* 64 programs to a bank file
Load DW-8000 Tape Dump	Load a bank of 64 programs from a WAV file; see section *Loading DW-8000 Tape Dumps*
Load SysEx File	Import a SysEx (SYX) data file; see section *Importing SysEx Data*

|	
Save SysEx Program File	Export the current program as a SysEx (SYX) data file; see section *Exporting SysEx Data*
Save SysEx Bank File	Export all 64 programs as a SysEx (SYX) data file; see section *Exporting SysEx Data*
Send SysEx Program Data	Send the current program as a SysEx data dump to the MIDI output; see section *Receiving And Sending SysEx Data*
Select Startup Bank	Select the bank file that should always be loaded when *FB-7999* is started
Load Startup Bank	Load the Startup bank file; can also be used to check what the current Startup bank is
Unselect Startup Bank	Unselect the current Startup bank
Default Path for Program Files	Sets the default path for program and bank files
Global MIDI Settings...	
MIDI Thru	Set if MIDI data sent to *FB-7999* should be sent through to its MIDI output (stored in configuration file)
Ignore Program Change	Set if MIDI Program Change data sent to *FB-7999* should be ignored (stored in configuration file)
Send Parameter Change SysEx	Set if MIDI SysEx Parameter Change data should be sent to the MIDI output (stored in configuration file); see section *Receiving And Sending SysEx Data*
Reload Configuration	Reload *FB-7999's* configuration file
Save Configuration	Save *FB-7999's* configuration file
Show Prg. Up/Down Buttons	Set globally if additional *Program Up* and *Down* buttons should be displayed in the user interface (stored in configuration file)
Window Size...	Change the window size of *FB-7999*
Save Window Size	Stores the current window size to the configuration file so that it will be restored on the next loading of *FB-7999*
Go Online...	
Check Online for Update	When connected to the Internet, this function will check if a newer version of *FB-7999* is available at fullbucket.de
Visit fullbucket.de	Open fullbucket.de in your standard browser

Program Editing

Digital Oscillators

FB-7999 features two digital oscillators – each oscillator provides 16 different waveforms and three octaves (16', 8', 4'). The levels of both oscillators are set individually. Oscillator 2 can be detuned and set to a different interval relative to oscillator 1 (minor/major third, quart, quint). There is also a polyphonic portamento function for both oscillators.
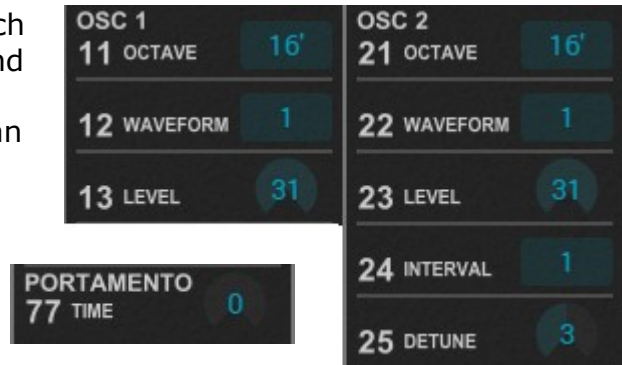
Waveforms

The *DW-8000* is famous for its set of 16 (!) digital single-cycle waveforms. To avoid aliasing, these waveforms are organized as *mipmaps* meaning that there are different wavetables for different pitch ranges: Waves for higher octaves have a lower frequency content than tables for lower octaves. Of course the *FB-7999* recreates this functionality.
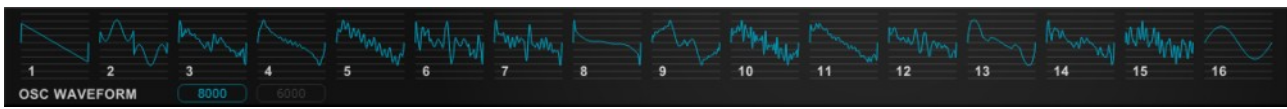
The 16 *DW-8000* waveforms.

In contrary, the *DW-6000* features only 8 waveforms. Thus I took the liberty to add 8 more waves including some standard "analog" waveforms to enhance the overall sound variety. These additional waveforms are displayed in orange.

The 8 *DW-6000* plus the 8 additional waveforms.

Independent of the current DW mode you can always switch between the waveform sets using the 8000/6000 selector underneath the waveform display.

Auto Bend

Auto Bend is a simple "ramp" envelope for the pitch of the oscillators. It can be activated for oscillator1, oscillator 2 or both. It works in two modes: *UP* or *DOWN*. "Up" means that at note start the pitch of the selected oscillator(s) will rise for a given time until it reaches its final (note) value while "Down" means that it will fall. The intensity of this effect is adjustable, too.

Note that this feature was not included in the original *DW-6000* hardware but is available in both DW modes of *FB-7999*.

Noise

Make some noise! In addition to the two oscillators, *White Noise* is the third sound source which can be controlled with respect to its level.

Filter (VCF)

The lowpass filter (VCF; Voltage Controlled Filter) of *FB-7999* has a 24dB/octave characteristic and can be driven to self-resonance. Besides the standard Cutoff, Resonance and Keyboard Tracking parameters it features an individual ADBSSR envelope generator (EG; see below). It is also possible to control the EG intensity (positive or negative) by velocity information.

Envelope Generators (EGs)

FB-7999 has to ADBSSR envelope generators (EGs), one for the VCF and one for the VCA (Voltage Controlled Amplifier). The shape and timing of the EGs depends on the selected DW mode.

DW-8000 Mode

key pressed

DW-6000 Mode
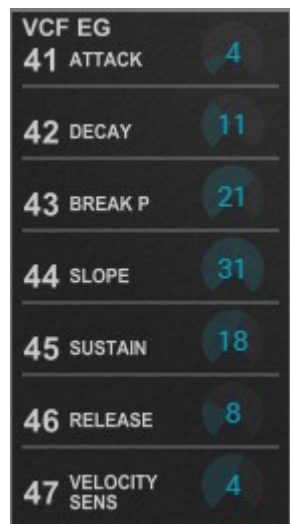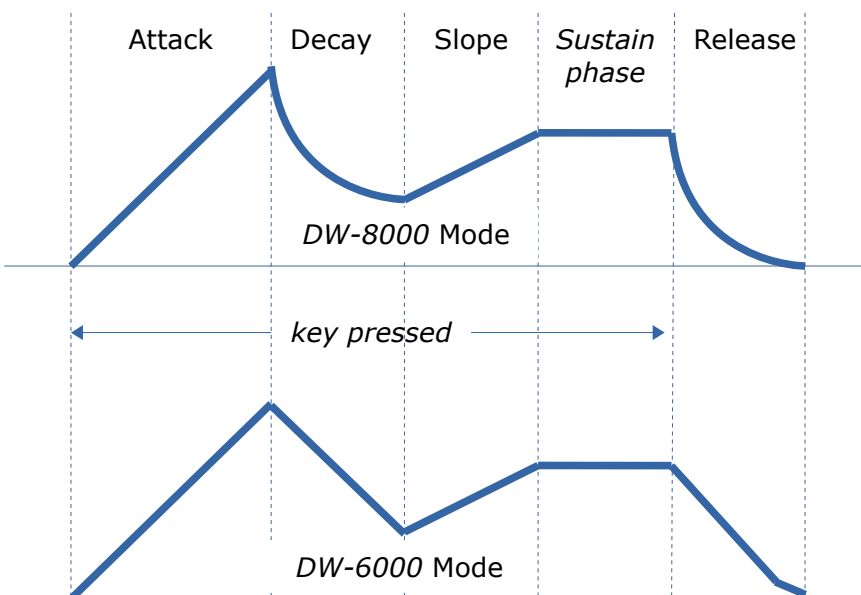
While the VCF EG affects the filter cutoff frequency only, the VCA EG controls the level of the current voice played. The intensity of both EGs can be controlled by the note velocity (note that this is not possible on the *DW-6000* hardware).

Modulation Generator (MG)

Apart from the filter and amplifier envelope generators, *FB-7999* adds a so-called modulation generator (MG). This is a low-frequency oscillator which can be routed to the oscillator pitch and/or filter cutoff. It features four different waveforms (the *DW-6000* only has Triangle), adjustable frequency and a delay function.

Again, the frequency settings of the MG depend on the current DW mode since both hardware devices have different implementations of their MGs.

Digital Delay

The digital delay of *FB-7999* has a coarse selector (*TIME*) and a fine adjustment control (*FACTOR*) for the delay time which ranges from 2ms to 600ms – this is what I have measured using Gerald's device and deviates from the 512ms stated in the original *DW-8000* manual.

The feedback parameter of the delay is rather peculiar as it returns the *phase-inverted* output of the delay unit back to the delay input. This results in a distinctive sound especially for short delay times.

The delay brings its own modulation generator with frequency and intensity controls to change the delay time periodically. Finally one can set the final effect level.
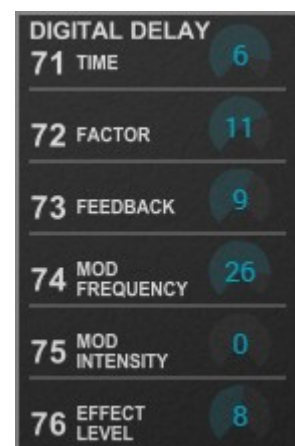
Note that both the *DW-6000* and the *DW-8000* feature stereo outputs. However, it is debatable whether the term "stereo" is justified since the difference between left and right is that one output provides the *phase-inverted* signal of the delay / Chorus effect while the other output delivers the *phase-normal* signal. This is a common configuration for many synth and effect devices of the 70s and 80s (for example the *Poly-800*) but it leads to a total annihilation of the effect signal when you mix both channels to a mono sum!

[*I remember a gig back in the 90s where the technician routed the "stereo" outputs of my DW-8000 to a mono bus – I was shocked that the delay signal was completely gone and thought my device to be broken…*]

Performance Control Parameters

There are several parameters that set the effect of various performance controls:

- **Pitch Bend** to oscillator pitch and/or filter cutoff.
- **(Channel) After Touch** to oscillator MG modulation intensity, filter cutoff and volume.
- **Modulation Wheel** to oscillator and filter cutoff MG modulation intensity.
- **Breath Controller** to filter cutoff MG modulation intensity.
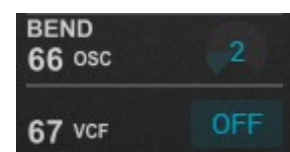
The last two bullets need some further explanation. The *DW-X000* devices feature the famous KORG joystick instead of classic pitch bend and modulation wheels: A vertical *upward* movement of this joystick controls the modulation amount of the oscillators (via the MG) while a *downward* movement controls the VCF modulation amount. The *DWs* send the *upward* position of the joystick using MIDI CC #1 (Modulation Wheel) but the *downward* position using CC #2 (Breath Controller). Since most standard MIDI controllers only have one modulation wheel, the default configuration of the VCF modulation parameter `85` can be switched from "Breath Controller" to "Modulation Wheel" by clicking on the respective label.
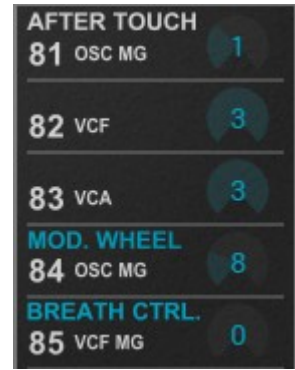
Tweaks

As already mentioned in section *Digital Delay* the *DW* devices offer a "pseudo" stereo output which can be enabled or disabled. Furthermore, *FB-7999* allows the number of voices (polyphony) to be eight or more (1, 2, 4, 6, 8, 16, 32, 64).
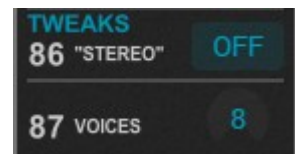
Key Assign Modes

FB-7999 features four keyboard assign modes:

- **POLY 1**
  Standard polyphonic voice scheduling: For a new note *FB-7999* tries to allocate the next voice that is not playing. If no such voice exists the new note will be scheduled to the "oldest" voice. This way the release phase of stopped notes will be preserved (if possible).

- **POLY 2**
  If only one note is played, that note is always scheduled to the first voice (even if this voice is playing the release phase of the previous note). If more than one notes are played the other voices will be used too. This mode is useful when long release phases should not "smear" the overall sound (this is identical to the KORG *Trident's* keyboard mode 2).

- **UNISON 1**
  At most 8 voices are monophonically played at the same time with slight detune (even if the number of voices is tweaked to be more than 8).

- **UNISON 2**
  The same as UNISON 1 but the EGs will not re-trigger when played legato ("single trigger").
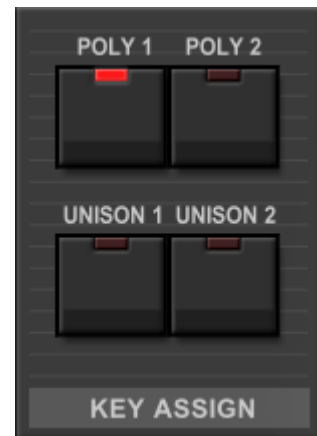
Parameters

Common

parameter	ID	description
Key Assign Mode	13	*POLY 1*, *POLY 2*, *UNISON 1*, *UNISON 2*
Edit Parameter	14	Parameter number assigned to edit slider
Volume	55	Total volume
Master Tune	56	Master tune (± 100 cents)
DW Mode	57	*DW-6000* or *DW-8000* mode
Wavetable Set	58	Selected wavetables (*8000* or *6000*)
VCF MG Mod. Source	59	MIDI CC for controlling the VCF modulation (Modulation Wheel or Breath Controller)

Digital Oscillator 1

parameter	ID	number	description
OCTAVE	0	11	Octave (16', 8', 4')
WAVEFORM	1	12	Waveform (1 – 16)
LEVEL	2	13	Level (0 – 31)

Digital Oscillator 2

parameter	ID	number	description
OCTAVE	7	21	Octave (16', 8', 4')
WAVEFORM	8	22	Waveform (1 – 16)
LEVEL	9	23	Level (0 – 31)
INTERVAL	10	24	Interval (1, -3, 3, 4, 5)
DETUNE	11	25	Detune (0 – 6)

Noise

parameter	ID	number	description
LEVEL	12	26	Level (0 – 31)

Auto Bend

parameter	ID	number	description
SELECT	3	14	*OFF*, *OSC1*, *OSC2*, *BOTH* (0 – 3)
MODE	4	15	*UP* or *DOWN* (0, 1)
TIME	5	16	Auto Bend time (0 – 31)
INTENSITY	6	17	Auto Bend intensity (0 – 31)

VCF

parameter	ID	number	description
CUTOFF	15	∃1	Cutoff frequency (0 – 63)
RESONANCE	16	∃2	Resonance (0 – 31)
KBD TRACK	17	∃∃	*Keyboard tracking: 0*, *¼*, *½*, *1* (0 – 3)
POLARITY	18	∃4	EG polarity: positive or negative (1, 2)
EG INT	19	∃5	EG modulation intensity (0 – 31)

VCF EG

parameter	ID	number	description
ATTACK	20	41	Attack time (0 – 31)
DECAY	21	42	Decay time (0 – 31)
BREAK POINT	22	43	Break Point level (0 – 31)
SLOPE	23	44	Slope time (0 – 31)
SUSTAIN	24	45	Sustain level (0 – 31)
RELEASE	25	46	Release time (0 – 31)
VELOCITY SENS	26	47	Velocity sensivitiy (0 – 7)

VCA EG

parameter	ID	number	description
ATTACK	27	51	Attack time (0 – 31)
DECAY	28	52	Decay time (0 – 31)
BREAK POINT	29	53	Break Point level (0 – 31)
SLOPE	30	54	Slope time (0 – 31)
SUSTAIN	31	55	Sustain level (0 – 31)
RELEASE	32	56	Release time (0 – 31)
VELOCITY SENS	33	57	Velocity sensivitiy (0 – 7)

MG

parameter	ID	number	description
WAVEFORM	34	61	*TRI*, *SAW*, *RAMP*, *RECT* (0 – 3)
FREQUENCY	35	62	MG frequency (0 – 31)
DELAY	36	63	MG delay time (0 – 31)
OSC	37	64	Oscillator modulation amount (0 – 31)
VCF	38	65	VCF cutoff modulation amount (0 – 31)

Bend

parameter	ID	number	description
OSC	39	66	Oscillator bend amount (0 – 12)
VCF	40	67	VCF cutoff bend amount: Off/On (0, 1)

Digital Delay

parameter	ID	number	description
TIME	41	71	Delay time coarse (0 – 7)
FACTOR	42	72	Delay time fine (0 – 15)
FEEDBACK	43	73	Feedback amount (0 – 15)
MOD FREQUENCY	44	74	Modulation frequency (0 – 31)
MOD INTENSITY	45	75	Modulation intensity (0 – 31)
EFFECT LEVEL	46	76	Output level (0 – 15)

Portamento

parameter	ID	number	description
TIME	47	77	Portamento time (0 – 31)

After Touch

parameter	ID	number	description
OSC MG	48	81	Oscillator MG modulation amount (0 – 3)
VCF	49	82	VCF cutoff amount (0 – 3)
VCA	50	83	VCA level amount (0 – 3)

Wheels

parameter	ID	number	description
OSC MG	51	84	Oscillator MG modulation amount (0 – 31)
VCF MG	52	85	VCF cutoff MG modulation amount (0 – 31)

Tweaks

parameter	ID	number	description
"STEREO"	53	86	Pseudo stereo: On/Off (0, 1)
VOICES	54	87	Number of voices (1 – 64)

Frequently Asked Questions

How do I install **FB-7999 (Windows VST2 32 bit version)?**

Just copy the files `fb7999.dll` from the ZIP archive you have downloaded to your system's or favorite DAW's VST2 plug-in folder. Your DAW should automatically register the *FB-7999* VST2 plug-in the next time you start it.

How do I install **FB-7999 (Windows VST2 64 bit version)?**

Just copy the file `fb799964.dll` from the ZIP archive you have downloaded to your system's or favorite DAW's VST2 plug-in folder. Your DAW should automatically register the *FB-7999* VST2 plug-in the next time you start it.

Note: You may have to remove any existing (32 bit) `fb7999.dll` from your VST2 plug-in folder or else your DAW may screw the versions up...

How do I install **FB-7999 (Windows VST3 64 bit version)?**

Just copy the file `fb7999.vst3` from the ZIP archive you have downloaded to your system's or favorite DAW's VST3 plug-in folder. Your DAW should automatically register the *FB-7999* VST3 plug-in the next time you start it.

How do I install **FB-7999 (Mac VST2/VST3/AU 64 bit)?**

Locate the downloaded PKG package file `fb7999_1_1_3_mac.pkg` in Finder (!) and do a right- or control-click on it. In the context menu, click on "Open". You will be asked if you really want to install the package because it comes from an "unidentified developer" (me ☺). Click "OK" and follow the installation instructions.

What is the "N" version of **FB-7999?**

The "N" version is the non-resizable version of *FB-7999* that should run on almost any older Windows or Mac machine. So if you have problems with the standard *FB-7999* version, this is the one to go for.

Note that the "N" version does not support the VST3 format.

What is the plug-in ID of **FB-7999?**

The ID is **f b 7 9** .

How do I know if a new version of **FB-7999** *is available?*

When connected to the Internet, open the File menu (see section *Options Menu*) by clicking the MENU icon and select the entry "Check Online for Updates". If a new version of *FB-7999* is available on fullbucket.de the respective information will be shown in a message box.

How do I resize **FB-7999** *window?*

Just grab the yellow triangle at the bottom right of the *FB-7999* window and drag it. You can save the current window size using the menu entry "Save Window Size" in the *Options Menu*.