MorphEdit for Windows

MorphEdit user guide

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1. <u>INTRODUCTION</u>

The MorphEdit editor allows you to edit all the parameters and sounds on a Morpheus or UltraProteus, ie. presets, hyperpresets, midimaps, program maps, user tuning table, and master settings. The intention of the editor is to present as many parameters as possible in a graphical format, making it much easier to see at a glance the important parameters making up each sound. In many ways the editing screens have been designed to look like those on a modular synthesiser, but with additional information also displayed that is only really possible on a computer display (for example graphical envelopes).

2. <u>REQUIREMENTS</u>

The editor requires the following :-

- A PC compatible 80386 (or higher) with at least 4MB of RAM and a hard disk.
  The editor itself only uses a small amount of disk space (less than 1MB), but you will also need space for any files you save from the editor.

- Windows 3.1 or 3.11, or Windows for Workgroups 3.11.
  The editor has also briefly been tested on Windows NT and Windows 95 (beta), and appears to run correctly, although only as a 16 bit Windows application. It has not been tested under OS/2 2.1 or Warp.

- A colour VGA or SVGA graphics card and monitor.
  Although the editor will work on a standard VGA (640x480 resolution), it is much better with a larger screen size, such as 800x600, 1024x768, or 1280x1024. This is simply because there are so many editable controls on the Morpheus/UltraProteus, and it is preferable to be able to display as many of these as possible.
  The editor has been designed such that the largest single editing screen (the preset) fits entirely onto a 1024x768 pixel screen.

- A Windows compatible MIDI card with Windows driver.

  The software has been tested on the Orchid Soundwave 32 card, which emulates the Roland MPU-401, and should therefore work with other MPU-401 compatible cards (the most common PC MIDI card standard). It has also been tested on a Creative Labs Sound Blaster Pro 2.

  Dumb MIDI cards can have problems keeping up with the high throughput of MIDI system exclusive data required by the editor. If you get a "MIDI overrun" error while reading data from the Morpheus or UltraProteus your MIDI card may be too slow. It is worth re-trying the same operation but if the error occurs frequently you may have to invest in a faster MIDI card (eg. an MPU-401 compatible card).

- A Morpheus or UltraProteus synthesiser.
  The software has been tested on a Morpheus with firmware revision 1.02 and an UltraProteus with firmware version 2.000.

3. <u>INSTALLATION</u>

The editor should be installed by running the application **INSTALL.EXE** on the installation disk. This may be run in one of several ways, for example :-

1. By selecting the **File->Run** menu option from the Windows Program Manager, then typing the installation utility name (**a:\install.exe** or **b:\install.exe**) or by selecting the browse button then interactively locating **install.exe**.

2. By locating and double-clicking the installation utility file from within the Windows File Manager.

The installation utility first asks you where it should copy the program files for the editor. The suggested directory is **c:\morphedt**, which is assumed to be on your first hard disk drive. You may type in a new directory name (which does not have to exist yet) or interactively select a directory by selecting the **Browse** button.

The installer next tells you how much disk space is required, and how much is available, on the selected disk drive and also in the Windows system directory (where some files also need to be copied). Select '**Start copying**' to copy the editor files.

Finally, the installer asks you whether to place the editor in a Windows *Program Group*. The suggested option is to create a new program group containing the editor. Alternatively you may choose to place the editor in the **Startup** group, (in which case it will start automatically every time you run Windows) or not to place it in any program group.

4. <u>STARTING THE EDITOR</u>

The way you start the editor depends on the option you selected during installation -

- If you chose to place the editor in the Startup group, it will start up automatically when Windows starts. If you want to start it without re-starting Windows, double-click on its icon in the Startup group.

- If you placed it in a new program group, you can start the editor by double-clicking on its icon in the new program group.

- If you didn't put the editor in any program group, you must either start it manually using the File Manager or the File->Run option, or you must place it in another Program Group yourself. See your Windows User Guide for details.

When you start the editor, it first appears as a single window covring the whole display, with only the test keyboard visible. At this point you cannot edit any sounds.

Before attempting to use the editor further, you must configure it to communication with your Morpheus/UltraProteus. Please see section 7.3 for further details.

5. <u>MODES OF OPERATION</u>

It is worth explaining the operating 'modes' of the editor to prevent you possibly being frustrated by you expecting it to work one way, while it is intended to work differently.

5.1 <u>Stand-alone vs. connected to the Morpheus/UltraProteus</u>

The editor should ideally be used in conjunction with a Morpheus or UltraProteus synthesiser which is connected (via MIDI cables) and switched on. In this mode, the editor becomes rather like an extension of the synthesizer itself, and any changes you make on your PC are also made on the Morpheus or UltraProteus.

However, when you first start the editor, it does not immediately try to connect to the synthesizer, since it may not yet be connected or switched on, or the editor may not yet have been configured with the same parameters as the synthesizer. While in this 'disconnected' or 'stand-alone' mode, you can still load files from disk and view or modify them in the editor. This feature can also be quite useful if you simply want to demonstrate the features of the editor to someone who hasn't got a Morpheus or UltraProteus. **When you first install the editor, there will be no sound files on disk, so you will not be able to make use of this mode of operation.**

However, if you connect to the synthesizer while any files are loaded in the editor, there may be a mismatch between what is in the editor and what is in the synthesizer. For example you might be altering a parameter on the screen that appears to be part of one sound, while on the synthesizer you are altering the same parameter on an unrelated sound that happens to have the same program number. For this reason, when you tell the editor to 'connect' to the synthesizer, the editor will immediately attempt to refresh its internal setup so that it is back "in step" with the synthesizer. Although this may sound like quite an overhead, it actually only takes a few seconds, and once you are 'connected' you do not need to do it again. Changing parameters once you are connected is almost instantaneous.

5.2 <u>The idea of a single edit mode</u>

The editor operates in a single editing 'mode', meaning that you edit one of the following at a time :-

- Presets

- Hyperpresets

- Midimaps

- Program maps

- User tuning table

- Master settings

You select the edit mode using the '**Edit**' menu.

5.3 <u>Single sound files</u>

Because of the interdependency of midimaps, hyperpresets, and presets, it is not possible to edit a midimap without having a set of presets or hyperpresets loaded to reference. Similarly it is not possible to edit a hyperpreset without a set of presets loaded.

For this reason, the editor saves all presets, hyperpresets, and midimaps together as a single file, referred to as the '**all sounds**' file in the editor. This avoids the possibility of referring to non-existent presets or hyperpresets.

It is however still possible to save and load an individual preset, hyperpreset, or midimap using the '**save single**' and '**load single**' file menu options.

6. CONTROLS USED THROUGHOUT THE EDITOR

6.1 Sliders

A custom slider control is used extensively throughout the editor. This control looks rather like a volume slider on an audio mixer, for example :-
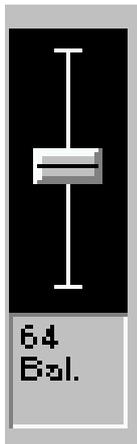
Using the mouse, you can grab the slider bar and move it between its upper and lower limit (the limits depend on which parameter it is associated with). If you click with the mouse anywhere in the black area, the grab bar will immediately jump to that position. For example if you click somewhere around the vertical centre of the track, the grab bar will jump to the centre point.

The area underneath the slider track displays the slider label (the parameter name) and its current value.

Because a slider may cover a large range of values (eg. 0 to 1000) the slider cannot accurately represent every possible value that the slider can take; it simply displays the grab bar at the appropriate relative position. If you want to *nudge* the slider **up** by 1, you can click with the **right** mouse button in the label/value area. Similarly, to nudge the slider **down** by 1, click with the **left** mouse button in the label/value area. If you **hold** the appropriate mouse button down for a longer time in the label/value area the slider will automatically scroll up or down in single unit steps.

6.2 Up-down controls

A custom up-down control is used throughout the editor. This control allows you to edit various parameter by stepping up or down through the entire range of permitted values. An example of the use of the up-down control is for editing keyboard note values.

Clicking on the up arrow steps the value up one unit; clicking on the down arrow steps down one unit.

The current value of the up-down control is displayed next to it. In all but a few special cases this can not be edited directly (from the keyboard) but simply reflects the value selected using the up and down arrows.

6.3 Envelopes

The envelope control is used for graphically displaying an AHDSR type envelope as used on the Morpheus / UltraProteus.
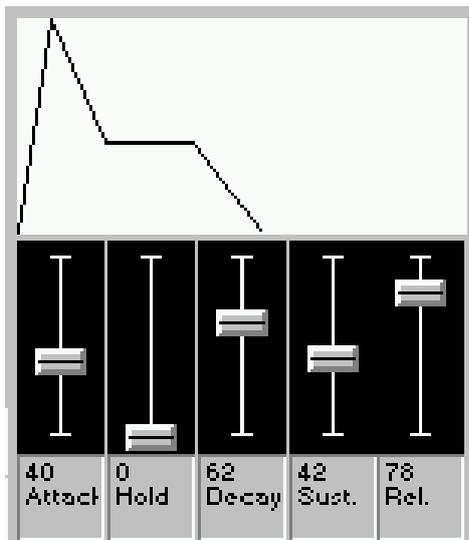
The envelope control responds to movement of the controlling sliders underneath the control, and displays a graphical representation of the envelope shape.

6.4 Patchboard pins

Patchboard pins are used in the modulation routing patchbays used in the preset editor.
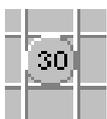
The pin displays the current modulation level for the modulation path represented by the intersection of the pin's row and column.

You can modify the modulation level by clicking with the left mouse button on the pin. When you do this a slider pops up next to the pin, with which you can modify the modulation level.
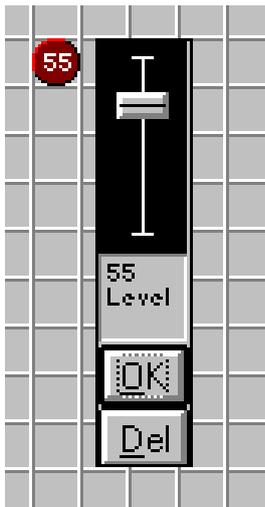
When you have finished modifying the modulation level, click on the **OK** button, and the slider will disappear. You can delete the modulation path by clicking on the **Del** button instead.

To insert a new modulation path, you can click at the source / destination intersection point. A new patch pin will appear, complete with slider. If you didn't mean to insert the pin, just click on **Del**.

Remember that there is a limit of 10 modulation patches for both real-time and note-on patches. If you find that you cannot add a new patch pin, it is probably because there are already 10 patches on the patchboard.

6.5 Modifiable listboxes

Because of the number of modifyable parameters on the Morpheus/UltraProteus, it is not feasible to display controllers for every single parameter at the same time. However, it is possible to at least display all their values. For example, each function generator segment has 6 parameters that can be modified (segment level, time, shape, jump condition, value, and destination segment). This means that for the 2 functions generators in a preset there are 2 x 10 x 6 = 120 parameters to edit. This would occupy a large amount of screen space.

The editor therefore displays a list of the current values of the parameters, and allows you to edit their values with a pop-up dialog that is not usually displayed. To access this dialog, **double-click** with the **left** mouse button on the line that you want to edit, and the editing dialog will appear. As you alter the values in this 'sub-dialog' the parameter changes will be sent to the synthsizer (as for other parameters) but you must click on the 'Finished' button to edit any other parameters.

An example of a modifiable listbox is the Function Generator -

Seg.	Level	Time	Shape	Cond.jump	Val.	->seg
1	-81	125	DelayDC	NoteOnEnd	0	1
2	0	125	DelayDC	Never	0	3
3	32	125	DelayDC	Never	0	2
4	81	125	DelayDC	Never	0	2
5	113	125	DelayDC	Never	0	2
6	81	125	DelayDC	Never	0	2
7	32	125	DelayDC	Never	0	2
8	0	125	DelayDC	NoteOnEnd	0	1

In this example, segment 1 is highlighted prior to being double-clicked and edited.

7. THE MAIN EDITOR WINDOW

The main editor window contains the menu, the edit window(s) for the current editing mode, and the test keyboard.

If any editing window does not completely fit into the main editor window, scroll bars will be displayed at the bottom and right of the main window. You can pan around the displayed windows by grabbing the scroll box on these bars and pulling it to the required position.

7.1 The MIDI status bar

At the bottom of the screen in the main editor window is the **MIDI status bar**, which displays the status of any lengthy MIDI operations (anything longer than a parameter change or MIDI note). For example, when you save or load a whole sound file while connected to the synthesizer, you will see the MIDI status bar counting through the presets, hyperpresets, and midimaps as they are transferred.

If for some reason a MIDI transfer fails, the status bar will show the operation current at the time of failure. This can sometimes be useful in diagnosing MIDI problems.

7.2 File Menu

Contains all the menu items required for loading and saving presets, hyperpresets, midimaps, program maps, and user tunings.

Also contains the EXIT option to quit the editor.

7.3 Options Menu

Contains three sub-options.

7.3.1 Preferences

This option displays a dialog which allows you to select the editor's MIDI options, the test keyboard MIDI controller assignments, and the preset-block directory.

It is essential that you configure these items the first time you use the editor, or you will not be able to communication with the Morpheus or UltraProteus. When you exit the editor after changing these settings, they will be saved, and you will not need to set them the next time.

7.3.2 Single preset window

Because the preset window contains so much information, it cannot be displayed in its entirety on anything smaller than a 1024x768 pixel display. If you are using a smaller display, you can choose to display the preset window as four separate 'sub-presets'. Selecting the Single preset window menu option switches between the 'big' and 'small' modes of the preset editor.

7.3.3 Connect to synthesizer

This is the 'connect' switch mentioned earlier. When you select this option, you will be asked to confirm the action, and if you answer YES, the editor will attempt to request to resynchronize with the Morpheus / UltraProteus.

7.4 Edit Menu

This contains the list of types of parameter that can be edited (eg. presets, hyperpresets, and midimaps).

When you select one of these items, the editor switches into the appropriate set of editing windows for that type. This may be as simple as displaying the user tuning listbox, or as complex as displaying all the preset names plus the preset editing windows.

Note that (depending on the speed of your PC) it may take several seconds to display all the preset editing windows, since there are so many controls in them.

7.5 Window Menu

This contains the following sub-options.

7.5.1 Cascade

Arranges all the currently visible windows in an overlapped cascade starting at the top left of the main window.

7.5.2 Arrange Icons

You can clear some space in the editor window up by minimizing one or more windows. If you do this the minimized windows will appear as labelled icons at the bottom left of the screen.

You can tidy up these iconized windows by selecting the 'Arrange Icons' menu options. All icons will line up at the bottom left of the screen.

7.5.3 Window names

At the bottom of the **Window** menu, the names of all the currently visible windows are displayed. Selecting one of these names brings the window to the top of the display, which is useful if the window has become submerged under other editing windows.

7.6 Help Menu

At present, this menu only contains the 'About' option, which displays information about the editor and the connected Morpheus / UltraProteus.

8. <u>THE TEST KEYBOARD</u>

The main editing window also contains the 'test keyboard'. This is a simulated piano keyboard that allows you to test changes you have made without having a connected external MIDI keyboard.

You can trigger any MIDI note by depressing the left mouse button over the desired note. While holding the mouse button down you can play rapid chromatic runs by moving the mouse left or right.

The test keyboard window also contains 4 simulated MIDI controllers. These can be used to simulate any standard MIDI controller type (mod. wheel, volume etc.). You can configure each controller via the Preferences dialog.

There are obvious limitations to this kind of simulated keyboard.

- It is monophonic, as you only have one mouse connected (don't you ?).

- It is not velocity sensitive - as a partial solution to this there is a '**velocity**' slider at the left of the keyboard that allows you to select a fixed velocity.

- The full MIDI keyboard range (128 notes) is rather wide for a PC screen - you can change the base octave via the Preferences.

You can also change the test keyboard's MIDI channel via the Preferences. You might want to do this when you are testing the channels of a midimap.

9. EDITING PRESETS

To display and edit presets, select the Edit->Presets menu option. The preset editor consists of the following windows :-

- *A list of preset names.*

- *The main preset editing window.*
  If you have selected 'Single preset window', this will show all of a preset parameters apart from the note-on and real-time routings.
  In 'Split preset' mode, you can select which part of the preset you want to edit using the toolbar buttons at the top of the preset window.

- *The note-on patchbay window.*

- *The real-time patchbay window.*

If you are connected to the Morpheus / UltraProteus or have already loaded a set of sounds, the preset names list will contain the names of the presets in your synthesizer.

To edit a preset, you must **double-click** (left mouse button) on the name of the preset you want to edit. All the preset editing windows switch to displaying the selected preset, and modifying a parameter in the editor causes that parameter to be changed on the synthesizer (if connected).

The editor uses the preset edit buffer in the same way as the Morpheus/UltraProteus front panel editor; any changes you make will be lost unless you **save** the edit. To save an edited preset click on the '**Save changes'** button at the top of the preset list window. If you decide you do not want to permanently save any changes, use the '**Abandon changes**' button.

If you attempt to edit a different preset without first saving a modified preset, you will be warned, and asked whether to first save the current preset.

Notes :-

- To change the name of a preset, use the edit box at the top left of the main preset editing window, then save the preset.

- The **sample loop start** and **length** up-down controls are special case controls in that they allow you to enter the control values directly into the associated edit boxes. This is because the range of permitted values is so high that waiting for the control to scroll to the desired value by holding down the up or down bottom may take a long time. To enter these values directly, simply type the number into the edit box (either high or low) then press ENTER.

9.1 Preset building blocks

It is often useful to be able to store a set of preset parameters that you use often, then to load those parameters into another preset. For example you might have a particular function generator setup in one preset that you find particularly effective, and want to incorporate this in other presets.

The editor allows you to store *building blocks* of preset parameters. The following are the parts of a preset that can be stored and loaded as building blocks -

- Primary voice (instrument, filter, and alt. envelope setup)

- Secondary voice (as for Primary)

- Note-on routings

- Real-time routings

- Auxiliary envelope

- Function generator 1

- Function generator 2

To store or load a preset building block, click with the mouse **right button** anywhere in a non-control area of the building block group. For example, to store the Primary voice building block, you could click on the '**Instrument**' label at the top-left of the Primary voice group -
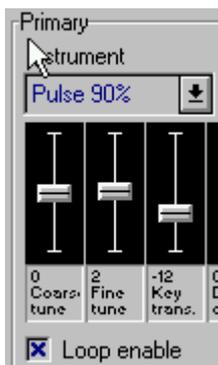
When you do this, a list of currently stored building blocks pops up -
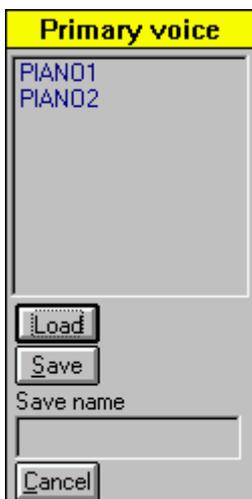
You can load an existing building block by selecting from the list then selecting '**Load**', or you can save the block by typing its name in the '**Save name**' edit box, then selecting '**Save**'.

Names of building blocks are limited to 8 characters, and may only contain characters that are valid in DOS file names (mainly letters and numbers). Building blocks are stored as DOS files in the directory that you configure in the Preferences dialog.

10. <u>EDITING HYPERPRESETS</u>

To display and edit hyperpresets, select the Edit->Hyperpresets menu option. The hyperpreset editor consists of the following windows :-

- A list of hyperpreset names.

- The main hyperpreset editing window, containing ALL the editable parameters.

If you are connected to the synthesizer or have already loaded a set of sounds, the names list will contain the names of the hyperpresets in your Morpheus/UltraProteus.

To edit a hyperpreset, you must **double-click** (left mouse button) on the name of the hyperpreset you want to edit. The editing window switches to display the selected hyperpreset, and modifying a parameter in the editor causes that parameter to be changed on the Morpheus/UltraProteus (if connected).

The editor uses the hyperpreset edit buffer in the same way as the Morpheus/UltraProteus front panel editor; any changes you make will be lost unless you **save** the edit. To save an edited hyperpreset click on the '**Save changes'** button at the top of the hyperpreset list window. If you decide you do not want to permanently save any changes, use the '**Abandon changes**' button.

If you attempt to edit a different hyperpreset without first saving a modified hyperpreset, you will be warned, and asked whether to first save the current hyperpreset.

11. <u>EDITING MIDIMAPS</u>

To display and edit midimaps, select the Edit->Midimaps menu option. The midimap editor consists of the following windows :-

- A list of midimap names.

- The main midimap editing window, containing ALL the editable parameters.

If you are connected to the Morpheus/UltraProteus or have already loaded a set of sounds, the names list will contain the names of the midimaps in your synthesizer.

To edit a midimap, you must **double-click** (left mouse button) on the name of the midimap you want to edit. The editing window switches to display the selected midimap, and modifying a parameter in the editor causes that parameter to be changed on the Morpheus/UltraProteus (if connected).

The editor uses the midimap edit buffer in the same way as the Morpheus/UltraProteus front panel editor; any changes you make will be lost unless you **save** the edit. To save an edited midimap click on the '**Save changes'** button at the top of the midimap list window. If you decide you do not want to permanently save any changes, use the '**Abandon changes**' button.

If you attempt to edit a different midimap without first saving a modified midimap, you will be warned, and asked whether to first save the current midimap.

12. <u>EDITING THE USER TUNING TABLE</u>

To display and edit midimaps, select the Edit->User Tuning menu option. The user tuning table editor consists of a single window containing the following items -

- A scrolling listbox showing the current tuning table.

- A coarse tuning slider.

- A fine tuning slider.

When you select a listbox line (single click), the coarse and fine tuning sliders display the tuning for that key. You can modify that key's tuning using the sliders. Changes to the tuning table do not take effect until you select the 'Save' button.

13. <u>EDITING PROGRAM MAPS</u>

To display and edit midimaps, select the Edit->Program Maps menu option. The program map editor consists of a single window containing the following items -

- A drop-down list to allow you to select any of the Morpheus/UltraProteus program maps.

- A scrolling listbox showing the current program mapping values.

- A drop-down list of all the available presets and hyperpresets.

When you select a listbox line (single click), the drop-down program list shows the mapped program for that input patch number. You can select a new mapped output program from the drop-down list. Changes to the program map do not take effect until you select the 'Save' button.

Program maps are saved and loaded to and from disk individually rather than as a single block.

14. <u>EDITING THE MASTER SETTINGS</u>

To display and edit master settings you must be connected to the Morpheus/UltraProteus. This is because the master settings are really temporary values that mainly reflect the last midimap selected. For that reason it is also not possible to save or load the master settings.

To display or edit the master settings, select the Edit->Master settings menu option. The master settings editor consists of a single window containing the following items -

- 16 drop down lists showing the preset or hyperpreset selected on each MIDI channel, plus the pan and volume for each of those channels.

- The master tuning, transpose, and bend range controls.

- The master keyboard velocity curve control.

- The MIDI mode control, and MIDI mode change enable switch.

- The MIDI controller assignment controllers.

- The footswitch assignment controllers.