### Using SurfaceReader

SurfaceReader is designed to provide speech output to assist visually-impaired users in their use of music and audio applications when used in conjunction with a screen-reader and a hardware control surface. It is a significant rewrite of its predecessor, the Mackie Display Reader, and provides the following features:

- Speech feedback triggered by any button, knob or fader on your control surface that transmits a MIDI message.
- Speech feedback of any control surface text display that is controlled by an application-generated MIDI message.
- Speech feedback for any control surface LED lamp that is controlled by an application-generated MIDI message.
- User-definable control surface protocols, allowing you to define the MIDI messages for your favourite device if a configuration file is not already supplied.
- User-definable application configurations, allowing you to define what feedback you hear for each button, knob and fader on your control surface.
- Support for multiple different active control surfaces, even if they're controlling different applications.
- Multiple modes of operation, allowing you to extend the available functions of your control surface beyond what its manufacturer provides.
- Support for operation under Windows and Mac operating systems.
- Any protocol definitions and/or application configurations that you create can be shared with other users.

# **System Requirements**

SurfaceReader can be run on any of the operating systems detailed in the following topics

## System Requirements - Limitations

SurfaceReader has been designed to work with as many hardware devices and software applications as possible by using MIDI messages as a means of obtaining information about what's happening in your software. However, we are aware of the following limitations:

- Although SurfaceReader should allow you to get an increased level of accessibility when used with any software that supports your control surface, it cannot help with applications that do not offer such support
- You may require sighted help to install and configure your software for use with SurfaceReader. For example, the dialog box for setting up control surfaces within Cubase is not at all friendly with Jaws.
- SurfaceReader does not currently offer support for the Novation range of control surfaces and controller keyboards. These devices use their own AutoMap software to handle their MIDI communications. We hope to address this limitation in a future release, but can make no promises.
- We have tried to maximise the flexibility of SurfaceReader by allowing a considerable amount of programmability within Screen-Reader mode. However, the differences between the various screenreading packages makes it impossible to provide a completely consistent approach. Indeed, no programmability is possible using System Access or NVDA, though there is the possibility of providing such support in future versions if these products implement the required functionality.

## System Requirements - Windows

SurfaceReader can be run on any of the following Windows variants:

- Windows XP, 32-bit.
- Windows Vista, 32-bit.
- Windows Vista, 64-bit.
- Windows 7, 32-bit.
- Windows 7, 64-bit.

#### Windows speech.

Speech output can be provided on the supported Windows platforms using any of the following screen-readers:

- Jaws. Version 8 is the minimum requirement for SurfaceReader operation, though later versions may be required to suit your installed flavour of Windows.
- Window-Eyes. Version 7.0 is the minimum requirement for operation with SurfaceReader.
- Dolphin Supernova ScreenReader. Version 11.53 is the minimum version required for SurfaceReader operation. Unfortunately, Supernova operation is only currently available for 32-bit versions of Windows.
- System Access. Any version of System Access should provide basic speech output on either 32 or 64-bit versions of Windows.
- NVDA. [Which Tim burgess still has to comment on here]

#### **Additional MIDI software**

In order to provide SurfaceReader's advanced features it is necessary to install two virtual MIDI cables for each physical control surface that you wish to use. Windows does not provide virtual MIDI cabling natively, so you will need to obtain suitable software to provide the required support. The following packages have been tested with SurfaceReader:

#### MIDI-Yoke.

This can be downloaded for free from <a href="http://www.midiox.com">http://www.midiox.com</a> and is recommended for use under Windows XP. We have encountered reports that this package also works under Windows Vista and Windows 7, but these later versions of Windows are not officially supported by MIDI-Yoke's authors and so any experimentation with such a combination will be at your own risk.

#### LoopBe30.

This is available at a very modest price from http://www.nerds.de/en/loopbe30.html and supports Windows XP, Windows Vista and Windows 7 (both 32-bit and 64-bit versions). Please note that its free companion program, LoopBe1, is not suitable for use with SurfaceReader, as it provides only one virtual cable.

## System Requirements - Apple Mac

SurfaceReader is able to run under Mac OSX 10.6, Snow Leopard, and later. No additional software is required to set up virtual MIDI cables, as this capability is already built-in on the Mac operating system. The virtual cables can be set up using the Audio/MIDI Setup app located in the /applications/utilities folder, though this will require sighted assistance as the required panel is inaccessible using VoiceOver.

## **Basic Configuration**

SurfaceReader can support multiple control surfaces, even if they're using different control surface protocols. Your installed surfaces are shown in the Surfaces list, which is displayed in the main window of the application when you first run it. The Surface menu is used to perform all actions that relate to a single surface so, apart from when you want to add a new control surface, you will need to select the surface you want to configure in the Surface list before using any of the Surface menu options.

## Installation

Please download the appropriate installation program for your operating system from <a href="http://www.raisedbar.net">http://www.raisedbar.net</a> and save it on your local hard disk (do not attempt to run the installation program from the web page). All you need to do then is run the downloaded file.

## A worked example for SurfaceReader configuration.

Dealing with virtual MIDI routing can be confusing and has generated a lot of support email traffic, so a worked example of how to configure a typical setup is provided here to try and clarify things. The following instructions should help get SurfaceReader going with a Behringer BCF2000, the LoopMIDI virtual MIDI package and Sonar. The same principles should apply for any other control surface, virtual MIDI package and any other DAW application:

### LoopMIDI configuration.

- 1. Download LoopMIDI from The LoopMIDI page.
- 2. Install LoopMIDI. The installation doesn't prompt for a reboot, butI think it's probably a good idea.
- 3. Once installed, open the LoopMIDI item that should now be on your Desktop.
- 4. You should now be in the Setup panel, so Tab to the "New port-name" entry and edit it to say "LoopMIDI 1" (without the quotes).
- 5. Tab to the Plus button and press Enter.
- 6. Tab to the "New port-name" entry again and edit it to say "LoopMIDI 2" (without the quotes).
- 7. Tab to the Plus button and press Enter.
- 8. Press Alt+F4 to close the LoopMIDI interface. Again, I'd reboot for safety's sake.
- 9. Once you've rebooted, go to the System Tray (Insert+F11 for Jaws users) and select LoopMIDI. Arrow down to the option to Start Minimized and press Enter this will stop the interface from getting in the way in the future.
- 10. Go to the System Tray again and select LoopMIDI. Arrow down to the option to Autostart LoopMIDI and press Enter this will make sure that the ports that you've set up will be available every time you boot your machine without you having to manually run LoopMIDI from the Desktop.
- 11. Reboot again.

## A worked example for SurfaceReader configuration.

## **Configuring SurfaceReader with LoopMIDI**

- 1. Load SurfaceReader.
- 2. Choose Add from the Surfaces menu to add a new control surface.
- 3. Give your surface a name and pick a protocol from the list. For the purposes of this example I'll call the surface BCF2k and choose the Mackie Control protocol.
- 4. Press Enter on the Setup MIDI Hardware button.
- 5. In the dialog that appears, choose the input port that your control surface is physically connected to (e.g. BCF2000 port 1 for a Behringer BCF2000 connected by USB).
- 6. Tab to the output list and choose the virtual port that will send data to your DAW software. In this example we'll use LoopMIDI 1. Tab to the OK button and press Enter.
- 7. Tab to the Setup MIDI Display button and press Enter.
- 8. In the dialog that appears, choose the virtual input port that will receive display data from your DAW software. In this example it'll be LoopMIDI 2.
- 9. Tab to the output list and choose the physical port that will send data back to your actual control surface (e.g. BCF 2000 Port 1 for our Behringer unit). Tab to the OK button and press Enter.
- 10. Tab to the Finish button and press Enter and your new surface definition should be added to the list.

## A worked example for SurfaceReader configuration.

## **Configuring Sonar.**

- Load Sonar.
- Go to the Options menu and choose MIDI Devices.
- Make sure that your new virtual ports are configured correctly in the input and output lists and that the physical ports being used by your control surface are unchecked. In this example, the setup should be:

## Input list.

- LoopMIDI 1 checked.
- LoopMIDI 2 unchecked.
- BCF2000 Port 1 unchecked.

## Output list.

- LoopMIDI 1 unchecked.
- LoopMIDI 2 checked.
- BCF2000 Port 1 unchecked.
- Go to the Options menu and choose Control Surfaces.
- Add a new Mackie Control definition with its input port set to LoopMIDI 1 and its output set to LoopMIDI 2.

## Changing the active protocol.

To change the protocol that your control surface is using:

- 1. Change the active protocol or memory preset on your control surface hardware using the manufacturer's instructions.
- 2. Select the surface in the Surface list that you want to change.
- 3. Go to the Surface menu.
- 4. Select the Properties sub-menu.
- 5. Select Protocol.
- 6. Pick the protocol definition that you want to use from the list.
- 7. Tab to the OK button and press Enter.

## **Protocol Definitions**

If you own a control surface and SurfaceReader doesn't already provide a protocol definition for it, don't despair. SurfaceReader allows you to define the MIDI messages that your device uses to create new protocol definitions. These definition files can be shared with other users.

#### What is a Protocol

A control surface protocol is just a set of MIDI messages that a manufacturer has decided to use to handle communication between the control surface itself and any application program that it is trying to control

You can think of control surfaces as being in one of two categories:

- 1. One-way devices.
- 2. Two-way devices.

#### One-way devices.

These tend to be the cheaper kind of control surfaces, very often implemented as keyboard or drum pad controllers. Their knobs, faders and buttons transmit MIDI messages that the application receives and processes, but there is no MIDI traffic being fed back to the device to supply state information. For this reason, they tend to offer on-board presets that change what messages each of the knobs, faders or buttons transmit - this allows them to cope with differing application program requirements.

Examples of one-way controllers would be any of the M-Audio keyboard controllers and the Kenton Control Freak.

#### Two-way devices.

These devices also transmit MIDI when their hardware controls are adjusted, but they also receive MIDI messages back from the software that they're controlling. This extra information is used to change display elements on the control surface, such as LED lamps and text displays, allowing the user to more easily understand and change the behaviour of the application software being controlled. The important thing to realise about the contents of any displays populated in this way is that the information being shown is completely generated by the application program and, specifically, its control surface driver.

Examples of two-way control surfaces are the Mackie Control Universal, the Mackie C4 and the Logic Control.

#### SurfaceReader and control protocols.

SurfaceReader allows you to teach it the MIDI messages that your control

surface uses and save them as a protocol definition. This means that you can use any number of devices that use these protocols and allow others to take advantage of your definitions by sharing the configuration files

.

## Creating a new protocol.

To create a new protocol definition, bring up the Protocol Wizard as follows:

- 1. Go to the File menu.
- 2. Select the New sub-menu.
- 3. Select Protocol definition...

The Protocol Wizard will appear, with the Surface page in focus. Each of the wizard's pages are described in the topics that follow.

### **Surface Page**

The Surface page presents the same options as for the Surface menu's Add... dialog box, except for there being no protocol list box. You are not allowed to create a new protocol without defining a surface that will use it. Once you've provided the required settings, Tab to the Next button and press Enter.

#### **System Exclusive Page**

This page allows you to define a name for your new protocol, together with any byte values that your device uses to identify its MIDI system exclusive messages. The fields are as follows:

- Protocol name.
- Manufacturer ID byte 1.
- Manufacturer ID byte 2.
- Manufacturer ID byte 3.
- Model ID.
- Device ID.

Apart from the protocol name, all of the other fields require a single byte value in hex format, so the valid range is from 00 to FF. The rule for the manufacturer ID is that, if the first byte is 00, the remaining two bytes must be specified. If the first byte is other than 00, the remaining two bytes should be empty.

The model and device ID values can be left blank if your device documentation doesn't specify values.

Once you've completed this page, press Tab until you get to the Next button then press Enter.

#### **Text Displays Page**

The Text Displays page of the Protocol Wizard contains a list box which shows an entry for each defined display and a number of buttons, as follows:

- Add. This button takes you into another dialog where you can define a display to add to the list box.
- Rename. This button prompts you for a new name for the display that is currently selected in the list box. This button will be unavailable if no display is selected.
- Translation tables. This button brings up a dialog box that allows you to define the character set for the display that is selected in the list box. You only need to define a translation table if your display uses a character set encoding that differs from ASCII. This button will be unavailable if no display is selected in the list box.
- Delete. Pressing this button will prompt you to confirm removal of the selected display from the list box. This button will be unavailable if no display is currently selected.

Once you have defined the displays on your unit, Tab to the Next button and press Enter.

#### **Adding a Text Display**

The Text Display Definition dialog box contains the following entries:

- Display name this is just a descriptive name for your display. It can help later if you use the same name(s) as those used in the device manufacturer's documentation.
- Number of display lines this is self-explanatory and defines the number of lines that the display extends over.
- Display length it is important to realise that this is not the same as the length of a single line of the display, but represents the total length of the display. For example, the Frontier Designs Tranzport surface has an LCD display that has two lines of 20 characters each, making the display length equal to 40.
- Strip columns this entry allows you to define the number of channel strips that your surface represents. Again, the Tranzport only displays a single track or bus at a time, so you'd enter 1 here. In comparison, the Mackie Control Universal is organised more like an eight-channel mixer, with eight channel strips, so the correct entry would be 8.
- <u>MIDI message definition... button</u>. This button allows you to specify the MIDI message that sends text to this display.

Once you've entered values into all of the fields and defined a MIDI message, Tab to the OK button and press Enter to return to the Text Displays page - your newly-defined display should now appear in the list box.

#### **Translation Tables.**

The Translation Tables dialog contains the following items:

- A list box of defined translation tables.
- The Add translation table... button.
- The Edit translation table... button.
- The Delete translation table... button.

#### Adding a translation table.

To add a new translation table:

- 1. Tab to the Add translation table... button and press Enter.
- 2. You will be prompted to give your translation table a name, so type one in then Tab to the OK button and press Enter.
- 3. A new dialog box will appear containing the following items:
  - A list box containing default values for each supported character code.
  - The Edit character... button.
- 4. Select the character you want to redefine in the list then Tab to the Edit character... button and press Enter.
- 5. You will be prompted to enter a new description for this character value. You could type in an individual alphanumeric or punctuation symbol, or a descriptive phrase. Tab to the OK button and press Enter when you're done.
- 6. Once you've defined all of the characters that you want to change from their default values, Tab to the OK button and press Enter. You will be returned to the Translation Tables dialog box and your new table should have appeared in the list box.

#### Editing a translation table.

To edit an existing translation table:

- 1. Select the table you want to edit in the list box.
- 2. Tab to the Edit translation table... button and press Enter.
- 3. A new dialog box will appear containing the following items:

- A list box containing the defined values for each supported character code.
- The Edit character... button.
- 4. Select the character you want to redefine in the list then Tab to the Edit character... button and press Enter.
- 5. You will be prompted to enter a new description for this character value. You could type in an individual alphanumeric or punctuation symbol, or a descriptive phrase. Tab to the OK button and press Enter when you're done.
- 6. Once you've defined all of the characters that you want to change from their default values, Tab to the OK button and press Enter. You will be returned to the Translation Tables dialog box.

#### Deleting a translation table.

To delete a translation table:

- 1. Select the table you want to remove in the list box.
- 2. Tab to the Delete translation table... button and press Enter.
- 3. You will be prompted to confirm the removal of the table. If you answer "Yes", the table will be removed from the list box.

#### **LED Lamps Page**

The LED Lamps page of the Protocol Wizard contains a list box which shows an entry for each defined LED and a number of buttons, as follows:

- Add. This button takes you into another dialog where you can define a LED lamp to add to the list box.
- Define LED states. This button takes you into another dialog that allows you to define names for the possible states of the selected LED in the list box. for example, On, Off or Flashing. This button will be unavailable if no LED is selected.
- Rename. This button prompts you for a new name for the LED that is currently selected in the list box. This button will be unavailable if no LED is selected.
- Delete. Pressing this button will prompt you to confirm removal of the selected LED from the list box. This button will be unavailable if no LED is currently selected.

Once you have defined the LED lamps on your unit, Tab to the Next button and press Enter.

## Adding a LED Lamp

The Define LED Lamp dialog contains the following items:

- LED lamp name this is just a descriptive name for the lamp. It is useful to use the same names as those in the manufacturer's documentation.
- The MIDI message definition... button. If you press Enter on this button you can define the MIDI message that your application software sends to your control surface in order to change the state of this LED.

Once you've provided a name and a message definition for your LED lamp, you can Tab to the OK button and press Enter. Your new LED lamp should then appear in the list box.

#### **LED States**

To define LED states:

- 1. Select the LED you want to define states for in the list box.
- 2. Tab to the Define LED States... button and press Enter.
- 3. A new dialog box will appear containing the following items:
  - A list box of defined states.
  - The Add State... button.
  - The Edit State... button.
  - The Delete State... button.
- 4. Perform your desired operations until the contents of the list box are what you want, then Tab to the OK button and press Enter.

#### Adding a state.

If you press the Add State... button described above, you will be prompted to define a new state by providing the following information:

- A descriptive label for the state (e.g. on, off or flashing).
- The MIDI data value that makes the LED go into the described state. Please note that this value needs to be supplied as a hexadecimal value between 00 and ff.

Once you've provided this information, Tab to the OK button and press Enter and your new entry should appear in the Defined States list box.

#### Editing a state.

To edit a lamp state:

- 1. Select the state you want to edit in the Defined States list box.
- 2. Tab to the Edit States... button and press Enter.
- 3. You will be prompted for a label and value, just as when you defined the state originally, but the edit boxes will contain the currently-defined values, so edit them to reflect the desired change.
- 4. Once you've finished your editing, Tab to the OK button and press Enter.

Your updated entry should appear in the Defined States list box.

### Deleting a state.

To delete a state:

- 1. Select the state you want to delete in the Defined States list box.
- 2. Tab to the Delete States... button and press Enter.
- 3. Confirm the deletion.

#### **Hardware Controls Page**

The Hardware Controls page of the Protocol Wizard contains a list box which shows an entry for each defined control and a number of buttons, as follows:

- Add. This button takes you into another dialog where you can manually define a control to add to the list box.
- Learn. If you press this button after adjusting one of your surface's hardware controls SurfaceReader will attempt to analyse the MIDI message that the control transmitted and automatically create a definition for that control. You will be prompted to enter a unique name for the control if the analysis is successful. Using this method is much easier than using the Add... button, which is only provided for special cases.
- Rename. This button prompts you for a new name for the control that is currently selected in the list box. This button will be unavailable if no control is selected.
- Delete. Pressing this button will prompt you to confirm removal of the selected control from the list box. This button will be unavailable if no control is currently selected.

Once you have defined the controls on your unit, Tab to the Finish button and press Enter to complete your protocol definition.

#### **Adding a Hardware Control Manually**

If you experience problems using the Learn... button to train your hardware controls, use the following method to define them manually:

- 1. Tab to the Add... button and press Enter.
- 2. Type in a descriptive label for your control.
- 3. Tab to the MIDI message... button and press Enter.
- 4. Define the MIDI message for your control using the dialog box that appears.
- 5. Tab to the OK button and press Enter. Your new control definition should appear in the list box.

#### Editing a protocol.

To edit an existing protocol definition, bring up the Protocol Wizard in edit mode, as follows:

- 1. Select the surface in the Surface list that you want to change.
- 2. Go to the Edit menu.
- 3. Select Protocol.

The Protocol Wizard will appear, with the System Exclusive page in focus. There is no Surface page in this version of the Protocol Wizard, as you've already defined the required parameters for that part of the process. The remaining pages are the same as when you run the Protocol Wizard for a brand new definition:

- 1. The System Exclusive page.
- 2. The Text Displays page.
- 3. The LED Lamps page.
- 4. The Hardware Controls page.

## **Application Configurations**

An application configuration allows SurfaceReader to be configured differently, depending on what audio/music application program you're working with.

## What is an application configuration?

The nature of control surfaces means that the functions that their various buttons, faders and knobs perform change from one application to another, so SurfaceReader allows you to create application configurations that make sure that the feedback that you get is appropriate for the application you're working with. An application configuration can assign custom names to any or all of your surface's controls and let you define lists of actions that each control will perform when activated.

## Creating a new application configuration.

To create a new application configuration, bring up the Configuration Wizard as follows:

- 1. Select the surface you want to configure from the Surfaces list.
- 2. Go to the File menu.
- 3. Select the New sub-menu.
- 4. Select Application Configuration...
- 5. Type in the name of the application you want to configure, then Tab to the OK button and press Enter.
- 6. If the application that you've chosen already has a configuration, you'll be queried as to whether you want to overwrite it.

The Configuration Wizard will appear, with the focus set on the active protocol name. There are a number of buttons that will show up as you Tab through the dialog, depending on your current location within the Configuration tree.

- Rename. This button allows you to change the name of the selected control.
   The new name will only be used when this application configuration is loaded the default label that is defined within the protocol definition will be used everywhere else. This button will only be available when you are focused on a control name.
- Add. This button brings up another dialog that allows you to pick an action to add to the selected control. You can add as many actions to a control as your computer's memory and hard drive space allows, so it is possible to create some very complex setups. This button will only be available when you're focused on one of the available modes for your selected control and active screen reader you are only allowed to add or modify actions in the branches of the tree that relate to the active screen reader on your system.
- Delete. This button allows you to remove actions you've added previously. The Delete button is available at the same times as the Add button.
- Up and Down buttons. If you've added some actions, but want to change the order in which they're executed, use these buttons. The Up and Down buttons are only available when you're focused on an action.

#### **Renaming Controls**

To rename a control within the Application Configuration wizard:

- 1. Select a control name within the tree view.
- 2. Tab to the Rename button and press Enter.
- 3. A dialog box will appear prompting you for a new control name. Type the new name in the edit box, press Tab to get to the OK button and press Enter.
- 4. The wizard will check that the new name is unique and warn you if it is not, so that you can try again. If your new name is unique, you'll be returned to the tree view, focused on the selected control and its new name.

## **Adding Actions**

To add an action to a control within the Application Configuration wizard:

- 1. Select the control you want to add the action to.
- 2. Expand the tree by pressing the right arrow key until you get to the level which shows the supported screen readers.
- 3. Use your up and down arrow keys to select the screen reader that you are currently using (you will not be allowed to add actions relating to any other screen reader).
- 4. Expand the screen reader branch by pressing right arrow this will take you to the level where you can choose which surface mode you want the new action to be active.
- 5. Use your up and down arrow keys to pick the mode you want to use (either Live or Screen Reader).
- 6. Tab to the Add button and press Enter.
- 7. The Action Picker dialog will appear where you can define your new action.
- 8. When you've defined your new action, you'll be placed back in the tree view of defined controls and actions.

## Using the Action Picker dialog.

- 1. When you first activate the Action Picker dialog box, you'll be focused on the control name you're defining the action for. Press the right arrow key to expand the tree view and place yourself at the level where you can pick one of the available action types.
- 2. Use your up and down arrow keys to pick from the available acteion types.
- 3. Once you've selected the action that you want to add, press Tab. If this takes you to the OK button you can just press Enter to add your new action to the selected control. If you find yourself on a Properties button instead, press Enter to define the additional information that your selected action requires.
- 4. Once you've defined any action properties you'll be returned to the Action Picker dialog, so just press Tab to get to the OK button and press Enter to finish defining your action.

Available actions.

Section

# The following actions are available:

Action	Meaning
Do nothing	No action is performed. This can be very handy if you want to make sure that you get no spoken feedback from a control (for example, the Record button, so you don't accidentally record the speech as the recording starts).
Say Control Label	Announces the name you've defined for this control
Say Control State	Announces the value of the control (for example, on, off or the MIDI value that it is generating.
Say Control Label and State	A combination of the previous two actions.
Read Display	Reads the entire contents of the specified display, or its state if it is an LED lamp.
Read Display Line	Reads the specified line of the specified display. Does nothing for LED lamps.
Read Display Strip	Reads the specified column information within the specified display. For example, reading strip 1 of the LCD display on a Mackie Control Universal would announce the two-column block of text immediately above the first V-Pot.
Read Display	Allows you to read any part of a specified display by allowing you to specify a starting position and a number of characters to be read from that position.

Press Key Combination	Equivalent to pressing the specified key combination on your QWERTY keyboard. This reature will not be implemented until version 1.1.
Change Surface Mode	Allows you to cycle through the available modes for your surface by just pressing a button on that surface.
Run Hot	This option is currently only available to Jaws users who have HotSpotClicker installed. You

Spot can pick a hot spot to be executed from a defined HotSpotClicker file.

Run Screen This action is currently only available to Jaws and Window-Eyes users. You can pick a script

Reader or function to be exected whenever you activate the selected control.

Function MIDI Info

This action allows you to hear the MIDI message information generated when you adjust a control surface button, knob, or other control. This is only allowed for those protocols that are not copy-protected. If you add a MIDI Info action to an encrypted protocol then the control's label will be read instead

## Defining action properties.

Depending on which action type you select from the Action Picker dialog, you may need to specify additional information by pressing the Properties button. You will then be shown another dialog that will allow you to select the required additional content. For example, if you choose to add a Read Display Line action, the Properties button will prompt you for the name of the display to be read and allow you to Tab to a list of valid line numbers for that display, so you can't get it wrong.

## Editing an application configuration.

To edit an existing application configuration:

- 1. Select the surface you want to configure from the Surfaces list.
- 2. Bring up the Surfaces menu.
- 3. Select the option: Load application configuration...
- 4. Select the configuration that you want to edit from the list box then Tab to the OK button and press Enter.
- 5. Bring up the Edit menu.
- 6. Select the option: Application configuration...

The Configuration Wizard will appear with the active protocol name as the focused tree item. For more information on editing application configurations, see the topic: Creating a new application configuration.

# **Appendix**

Topics not contained in the main Help will usually be found here.

## **Defining a MIDI Message**

To define a MIDI message using the Define MIDI Message dialog box:

- 1. Choose the required message type from the group of radio buttons. The hexadecimal values shown in parenthesis after the message type represent the MIDI value for this message type and is shown to help you identify the correct values in the equipment manufacturer's documentation.
- 2. Fill in any additional fields that may appear to help you complete the message definition. The possible fields are described below.
- 3. Tab to the OK button and press Enter.

#### MIDI message fields.

The following descriptions should help you understand any additional prompts that may appear after you've selected a message type.

#### MIDI channel.

If you selected a message type of Note on, Note on/off, CC, Pitch Wheel, RPN, NRPN, or Nibble by nibble, You need to enter which MIDI channel your message will be transmitted on when the desired control is adjusted. The valid values, in decimal form, are 1 through 16 inclusive.

#### Note number.

This is a decimal number representing a specific note in MIDI. Most control surfaces transmit note on or note on/note off messages, with the note number indicating which particular button was pressed/released. Your control surface documentation should contain a table of button names and their corresponding note number values. Many surfaces also use this kind of message to change the state of LED lamps and, again, the manufacturer's documentation should provide the values.

#### Message number

If you've selected a message type of CC, RPN or NRPN, this field will appear. The number you need to enter will be provided by your control surface's documentation and should be entered in decimal format.

### System exclusive message, Add Address byte... and Remove Address Byte....

If you selected a message type of Complete SysEx, you will be able to create a MIDI system exclusive message definition. These messages are constructed using the information from the System Exclusive page of the Protocol Wizard, together with a number of command address bytes that you define here. The following items will appear in your Tab order:

- 1. The System exclusive message read-only edit box. This contains a representation of a MIDI system exclusive message that you've defined for this control. it is displayed to help you check your message definition as you add/remove bytes to/from the message.
- 2. The Add message address byte... button. If you press Enter on this button you will be prompted to type in a byte value in hexadecimal format (the valid range is 00 through ff, inclusive). Once you've typed in the value, press Tab to get to the OK button then press Enter. Your new byte will appear within the System exclusive message read-only field, so you can check that its value and position are correct. Please note that address bytes are added immediately before the terminating F7 (end of system exclusive message) byte.
- 3. Remove message address byte button. If you press Enter on this button you will successively remove any address bytes that you've added to the message definition. Bytes are removed in reverse order, so the last byte you added will be the first to be removed. You can check the System exclusive message read-only edit box to ensure that you know what's happening.

## **Keyboard Shortcuts**

### **Surface List.**

The following keystrokes are defined when you are focused on the Surface list.

## **Keystroke** Function

Delete Removes the selected surface.

F1 Displays the Help system's Table of Contents.

F2 Renames the selected surface.

F3 Puts the selected surface into Live mode. F4 Puts the selected surface into ID mode.

F5 Puts the selected surface into Screen reader mode.

Alt+Enter Edits the selected surface's protocol (same as choosing Surfaces>Properties>Protocol from

the menu system).

Control+Enter Shows a report detailing the current state of all of the displays defined for the selected

surface.

## **Using a Frontier Designs Tranzport**

Sonar

## **Panel Layout**

LCD display

**Battery Backlight** 

Undo (above jog Prev Track Next Track Arm Mute Solo

wheel)

In Out Punch Loop

Shift (large circular Prev Add Next button)

(with Play Record Stop FF Rewind tactile dot)

### **TranzPort Button and Data Wheel Functions**

Many of the buttons on the Tranzport can be used with either the Shift or Stop buttons to provide extra functions:

Button name Normal Function Shift +Function Stop button +Function

Rewind Rewind Return to zero

Fast forward Fast Forward Go to end

Meter Modifier key Toggle Big **STOP** Stop

mode

playback Audio Scrubbing: Toggle Play Hold and use wheel **PLAY** metronome on/off

to scrub audio

Toggle record

RECORD	Record	metronome on/off	
PREV	Go to previous marker - Hold to scroll with wheel	User-defined Shift+F1	as Ctrl+Shift+F1
ADD	Add marker at current location	tUser-defined Shift+F2	<sup>as</sup> Ctrl+Shift+F2
NEXT	Go to next marker - Hold to scroll with wheel	User-defined Shift+F3	as Ctrl+Shift+F3
IN	Set punch in point	Set loop in point	Ctrl+Shift+F4
OUT	Set punch out point	Set loop out point	Ctrl+Shift+F5
PUNCH	Toggle punch mode (LED inactive)	Cycle through tine formats	me Ctrl+Shift+F6
LOOP	Toggle loop mode	Toggle level/p selection for shift data wheel change	ted Ctrl+Shift+F7
LOOP  Previous TRACK	Toggle loop mode  Previous track/bus (left/down) - hold to scroll with wheel	selection for shift data wheel change	ted Ctrl+Shift+F7
Previous	Previous track/bus (left/down) - hold to	selection for shift data wheel change Show tracks	ted Ctrl+Shift+F7 s
Previous TRACK	Previous track/bus (left/down) - hold to scroll with wheel  Next track/bus (right/up) - Hold to scroll with wheel	selection for shift data wheel change Show tracks Show buses	ted Ctrl+Shift+F7 s Ctrl+Shift+8
Previous TRACK Next TRACK	Previous track/bus (left/down) - hold to scroll with wheel  Next track/bus (right/up) - Hold to scroll with wheel  Toggle track's	selection for shift data wheel change Show tracks Show buses Clear all reco	ted Ctrl+Shift+F7 s Ctrl+Shift+8 Ctrl+Shift+9

UNDO Undo last action Redo last undo

DATA WHEEL Scroll timeline Adjust level or pan

FOOTSWITCH User Definable

## Sonar

## **Panel Layout**

## LCD display

**Backlight Battery** 

Undo (above jog Prev Track Next Track Arm Mute Solo

wheel)

In Out Punch Loop

Shift (large circular Prev Add Next button)

Stop (with Play Record FF Rewind tactile dot)

#### **TranzPort Button and Data Wheel Functions**

Many of the buttons on the Tranzport can be used with either the Shift or Stop buttons to provide extra functions:

Normal Function Button name Shift +Function Stop button +Function

Rewind Rewind Return to zero

Fast Forward Fast forward Go to end

Toggle Meter Modifier key Big **STOP** Stop

mode

Audio Scrubbing: playback Toggle **PLAY** Play

Hold and use wheel metronome on/off

to scrub audio

Toggle record **RECORD** Record

metronome on/off

previous Go to

PREV	marker - Hold to scroll with wheel		as Ctrl+Shift+F1
ADD	Add marker as current location		<sup>as</sup> Ctrl+Shift+F2
NEXT	Go to next marker - Hold to scroll with wheel	User-defined Shift+F3	as Ctrl+Shift+F3
IN	Set punch in point	Set loop in point	Ctrl+Shift+F4
OUT	Set punch out point	Set loop out point	Ctrl+Shift+F5
PUNCH	Toggle punch mode (LED inactive)	Cycle through ti formats	me Ctrl+Shift+F6
LOOP	Toggle loop mode	Toggle level/p selection for shift data wheel change	tedCtrl+Shift+F7
Previous TRACK	Previous track/bus (left/down) - hold to scroll with wheel		Ctrl+Shift+8
Next TRACK	Next track/bus (right/up) - Hold to scroll with wheel		Ctrl+Shift+9
REC	Toggle track's record arm on/off	s Clear all reco arming	ord Ctrl+Shift+F10
MUTE	Toggle track's mute on/off	Clear all mutes	Ctrl+Shift+F11
SOLO	Toggle track's solo on/off	Clear all solos	Ctrl+Shift+F12
UNDO	Undo last action	Redo last undo	
DATA WHEEL	Scroll timeline	Adjust level or par	1

## FOOTSWITCH User Definable

## **Panel Layout**

## LCD display

Battery Backlight

Prev Track Next Track Arm Mute Solo Undo (above jog wheel)

In Out Punch Loop

Shift (large circular Prev Add Next button)

Rewind FF Stop (with Play Record tactile dot)

### **TranzPort Button and Data Wheel Functions**

Many of the buttons on the Tranzport can be used with either the Shift or Stop buttons to provide extra functions:

Shift +Function Normal Function Button name *Stop button +Function* Rewind Rewind Return to zero Fast forward Fast Forward Go to end Meter Modifier key Toggle Big **STOP** Stop mode Scrubbing: Audio Toggle playback Play Hold and use wheel **PLAY** metronome on/off to scrub audio Toggle record Record **RECORD** metronome on/off

PREV
Go to previous User-defined as Ctrl+Shift+F1 scroll with wheel

Go to previous User-defined as Ctrl+Shift+F1

ADD	Add marker a current location		<sup>as</sup> Ctrl+Shift+F2		
NEXT	Go to next marker Hold to scroll with wheel	User-defined Shift+F3	as Ctrl+Shift+F3		
IN	Set punch in point	Set loop in point	Ctrl+Shift+F4		
OUT	Set punch out point	Set loop out point	Ctrl+Shift+F5		
PUNCH	Toggle punch mode (LED inactive)	e Cycle through tir formats	ne Ctrl+Shift+F6		
LOOP	Toggle loop mode	Toggle level/p selection for shift data wheel changes	edCtrl+Shift+F7		
Previous TRACK	Previous track/bu (left/down) - hold to scroll with wheel	_	Ctrl+Shift+8		
Next TRACK	Next track/but (right/up) - Hold to scroll with wheel	=	Ctrl+Shift+9		
REC	Toggle track' record arm on/off		rd Ctrl+Shift+F10		
MUTE	Toggle track's muton/off	<sup>e</sup> Clear all mutes	Ctrl+Shift+F11		
SOLO	Toggle track's solo on/off	<sup>O</sup> Clear all solos	Ctrl+Shift+F12		
UNDO	Undo last action	Redo last undo			
DATA WHEEI	Scroll timeline	Adjust level or pan			
FOOTSWITCH User Definable					