

# GS-10 MANAGER



Version 2.4.1

## MANUAL

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MOUNTAIN UTILITIES



<https://mountainutilities.eu/>

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# 1. Overview

GS-10 Manager is a utility by Mountain Utilities for working with the BOSS GS-10 Guitar Effects System.

GS-10 Manager is only available for Windows. (A future Linux edition is unlikely, but not impossible. There are no plans for a macOS edition.)

GS-10 Manager is free, although donations are very welcome.

GS-10 Manager combines all functionality from GS-10 Editor and GS-10 Librarian (which come with the GS-10 itself). Thus, GS-10 Manager provides seamless integration of real-time GS-10 control, patch editing and patch library management. Basically GS-10 Manager is all you need, so if it is properly set up, most synchronization problems should be a thing of the past.

Additionally, GS-10 Manager has a large number of powerful extra features. It also fixes a few bugs occurring in GS-10 Editor and GS-10 Librarian, and even manages to work around a few bugs in the GS-10 itself.

Compared to GS-10 Editor, GS-10 Manager contains (among others) the following enhancements:

- If set up properly, GS-10 Manager starts up considerably faster than GS-10 Editor. (Note: the *first* time GS-10 Manager starts up, it *does* take a long time, namely to load all the GS-10's user patches, but this should be necessary only once.)
- A *single* window for each effect, showing *all* parameters. (In GS-10 Editor one has to open an extra window to see e.g. the Speaker/Mic settings, whereas many other Preamp/Speaker parameters are then shown twice.)
- All the effects are automatically aligned within a single encompassing window. This greatly reduces the complexity of the screen (which quickly gets very annoying in GS-10 Editor).
- An option to automatically visualize only the *active* effects. ('WYSIWYN' – what you see is what you need!)
- A Windows-compatible user interface: one can 'tab' through the parameter knobs, and more easily modify parameter values by using the keyboard (via the arrow keys, spacebar etc.).
- Customizable keyboard hotkeys (or 'shortcuts') for switching particular effects on/off, etc.
- A customizable effect color scheme.
- Detection of any Quick FX active in a patch. (In GS-10 Editor one can *set* Quick FX, but one cannot determine which Quick FX is active once it has been set.)
- Display of the frequency response plots for the Equalizer and Stereo Equalizer effects. This makes working with these effects much more transparent.
- Graphical representation of the output levels of the Slicer pattern.
- Live display and processing of the position(s) of the expression pedal or control pedals connected to the GS-10.

- Live processing of the Control Change MIDI messages from an external MIDI foot controller (such as the Behringer FCB1010 MIDI Foot Controller) connected to the GS-10 via GS-10 Manager's 'soft MIDI thru'.
- Any incoming MIDI data can be captured and displayed in detail. This is particularly useful for troubleshooting setups involving MIDI control surfaces such as the FCB1010.
- An advanced editor for the FCB1010. This includes a 'Soft FCB1010', a software emulation of the FCB1010 that sends out MIDI data exactly like a real FCB1010.
- An Assign Wizard that simplifies setting up Assigns.
- The GS-10 can be used as a control surface, i.e. its knobs and buttons can control any external MIDI device.  
This external MIDI device can even be the GS-10 itself: in this way, knobs on the GS-10 can be redirected to *other* GS-10 parameters. For instance, you could have the Chorus Level knob on the GS-10 control Phaser Depth!
- Indication of the mono/stereo flow in the effect chain, and of any place where a stereo signal is being lost.
- Information on each effect and parameter in pop-up ('hint') boxes.
- An optional warning before an unsaved patch is overwritten. (Beware: this currently only works if the attempt at overwriting is performed on the computer, *not* if you select a different patch on the GS-10 itself.)
- The GS-10 itself and GS-10 Editor both contain severe bugs concerning the Harmonist user scales if the Harmonist Key parameter is set to anything else than C/Am. The result is a complete mess if you edit these scales in GS-10 Editor. GS-10 Manager works around the GS-10's bug, and editing the Harmonist user scales works correctly.

Compared to GS-10 Librarian, GS-10 Manager contains (among others) the following enhancements:

- The user patch and library windows are much more flexible than Librarian's windows. In GS-10 Manager you can directly open gsl files in the user patch window, and you can move any group of patches around within a window and between windows.  
It is also possible to copy any combination of effects (or even 'Assigns') from one patch to any number of other patches (leaving these patches' *other* effects intact) in a single operation.
- Visualization of the main features of each patch in a table. This table specifies which effects are on and in which order, and also lists the active Assigns. All the active Quick FX for each patch can also be displayed.
- A window showing all the names and main features of the preset patches.
- The user patch and library windows feature a sophisticated sorting operation, using multiple sort keys (e.g. primarily by preamp type, secondly by OD type).

- Searching for a particular patch name.
- Comparison of ranges of patches, listing those effects that differ between two patches.
- Optionally, GS-10 Manager sends a patch to the GS-10 as the ‘temporary patch’ *immediately* upon selection. This greatly improves ease of use. (In Librarian you need to click a ‘temporary write’ button.)
- Librarian’s ‘temporary write’ procedure is seriously flawed in two ways: under certain conditions particular effect settings are passed incorrectly, and the GS-10 can even become a temporary mute. GS-10 Manager solves these problems. (The ‘temporary mute’ problem is actually caused by a fault in the GS-10 itself, but GS-10 Manager manages to work around this.)
- Conversion of GT-3 and GT-6 patches (in syx files) to GS-10 patches.
- Export of patches to text files.

## 2. Version history

### Version 2.4.1 (2020-11-17)

- The application has become more user-friendly concerning data errors in ‘.stp’ and ‘.mru’ configuration files:
  - On startup, when the application encounters a data error in a configuration file, the application now mentions the exact name of the offending file, and no longer refuses to start. Hence it is no longer necessary to delete corrupt configuration files manually.
  - On exit, the application reports any errors while saving configuration files.
- The update check mechanism works again on Windows versions supporting TLS 1.2 but not TLS 1.3, i.e. Windows 7, Windows 8 and pre-TLS 1.3 Windows 10. (Windows XP and Vista (which don’t even support TLS 1.2) were not hit by this problem, and still work too.)

### Version 2.4.0 (2020-09-14):

- This manual has been enhanced with screenshots and several new sections.
- The update check mechanism should now work again on any operating system capable of running the application, including Windows XP.
- The installer allows you to deselect non-essential files: the manual, the skin definitions and the FCB1010 examples.
- Increased the application’s running speed by disabling some debugging safeguards. (From now on, this will apply to all Release Candidate and Release versions.)
- Skins: 39 alternative user interfaces, mainly color schemes.
- Full support for the ‘Per Monitor v2’ DPI awareness protocol introduced in Windows 10 Creators Update 1703: at high DPI settings all text characters look razor-sharp instead of blurry, and the resolution of each window automatically adapts to the monitor on which it is (mainly) being shown.
- To always show the *full* application title on the main window’s title bar, the width of the main window now takes the minimize, maximize and close buttons into account. This is especially relevant to Windows 10: its huge buttons previously caused the application title to be truncated.
- Corrected an error in the layout of the Foot Volume effect panel that was introduced in version 2.3.0.

### Version 2.3.0 (2017-11-25):

- The exe file of the installer is no longer offered within a zip file, but directly.
- If a previous version of the application has been installed, the installer skips the dialog box in which you can set the destination folder and the dialog box in which you can set the program group in the Windows menu. So if you wish to install to a different folder or program group, you must uninstall the previous version first.
- The installer automatically installs the edition of the application that matches the operating system: the 32-bit edition on 32-bit Windows, the 64-bit edition on 64-bit Windows. (Previously there was only a 32-bit edition, which was installed on 32- and 64-bit Windows alike.)
- Portable 32- and 64-bit editions are available. The 32-bit edition runs on 32- and 64-bit Windows, the 64-bit edition only on 64-bit Windows.
- GS-10 Manager uses the Mountain Utilities web site at <https://mountainutilities.eu> in links and its update mechanism.
- The GS-10 Manager update mechanism allows you to specify in which update types you are

interested: alpha (development) versions, ('public') beta versions, release candidates and release versions.

- GS-10 Manager no longer refuses to start if system.ini doesn't exist in the Windows system folder.
- Maintenance of multiple application setups (such as window positions and the enabled/disabled states of MIDI devices) via setup ('.stp') files. See the Setup submenu in the File pull-down menu of the main window. Note that opening a previously saved setup file involves restarting the application. You can also start the application with a setup file as a command line parameter: /s setupfile.
- Maintenance of the application's window positions via desktop ('.dsk') files; see View ⇨ Desktop in the main window. Unlike opening a setup file, opening a desktop file does *not* involve restarting the application.
- You can sanitize the lists of most-recently opened/saved files in the menus via two operations: 'Remove absent files from list' and 'Clear list'.
- In the 'Window list' dialog box you can make all windows visible in one operation.
- Many internal improvements to MIDI input and output communication. In particular, the input system for SysEx messages has been redesigned completely, one consequence being that the maximum SysEx message length is now fixed at 65536 bytes, hence it is no longer editable via the Input tab of the MIDI devices dialog box.
- The MIDI input messages window can display message times in various formats: (((days:)hours:)min:)sec.)ms.
- The Donate item in the main window's Help pull-down menu no longer opens a dialog box, but makes your web browser open the Donate page at the Mountain Utilities web site.

### **Version 2.2.2 (2013-07-04):**

- In compliance with UAC (User Access Control) in Windows Vista and later, GS-10 Manager relocates the files containing the (supposedly) current GS-10 state (Current.gsq, Current.gss, Current.gst, Preset.gsl and User.gsl) to the user's AppData folder, typically C:\Users\username\AppData\Local\Mountain Utilities\GS-10 Manager. (Tip: to see the AppData folder in Windows Explorer, 'Show hidden files...' must be selected in the View tab of the Folder Options dialog box.)

Previously GS-10 Manager 'thought' it was working with these files in its own program folder (typically C:\Program Files[ (x86)]\Mountain Utilities\GS-10 Manager), but Vista and later confusingly redirected these files to C:\Users\username\AppData\Local\VirtualStore\Program Files[ (x86)]\Mountain Utilities\GS-10 Manager.
- Windows that were open when the previous session of GS-10 Manager terminated reappear exactly where they were. (In previous versions of GS-10 Manager, even a window on a secondary monitor always reappeared on the primary display, even when the secondary monitor was still available.)

This new behavior has one potentially problematic consequence: when you remove a monitor or reduce the screen resolution, windows may become invisible upon a restart of GS-10 Manager. To remedy this, you can use the new 'Make fully visible' operation in the 'Window list' dialog box (accessible via the main window's View pull-down menu or the Alt+0 key combination).
- Fixed scaling (under alternative DPI settings) of the 'Modified' panel in the GS-10 patch list windows and the FCB1010 window.

### **Version 2.2.1 (2011-08-29):**

- When GS-10 Manager is run for the first time under Windows 7, it automatically selects the correct MIDI input and output ports, i.e. 'GS-10 Control'. (Previously it wrongly defaulted to

the *first* MIDI I/O ports (which could be anything), because its name scan only looked for ports called 'BOSS GS-10 Control', i.e. the port names under Windows XP and Vista.)

- New feature: via View ⇨ 'Stay on top' you can keep GS-10 Manager's main window on top of GS-10 Manager's other windows and other applications.
- The main window has been widened slightly, to make it less likely that its caption ('GS-10 Manager') gets clipped under Aero themes.
- Resolved a hotkey conflict in the main window's View pull-down menu.
- Several tiny stylistic improvements to this manual. Also corrected a typo in section 13.

### **Version 2.2.0 (2011-04-12):**

*New features:*

- Unicode support. However, this mainly applies to file names and control surface presets. Obviously you still can't use Unicode in GS-10 patch names or gsl files.
- As a consequence of its new Unicode support, GS-10 Manager no longer runs under Windows 95, 98 or Me, because these operating systems do not support Unicode. (If you require a version of GS-10 Manager that runs under these operating systems, please send a message to the contact address at the Mountain Utilities web site.)

*Improvements:*

- For clarity, the name of a *disabled* MIDI I/O device is no longer prefixed by an asterisk (\*), but by 'DISABLED ', and the name of an *absent* MIDI I/O device is no longer written between parentheses, but prefixed by 'ABSENT '.
- The 'Check for update' dialog box opens on first startup of GS-10 Manager. (Previously a silent update check was performed in this situation.)
- Many small internal improvements, particularly concerning MIDI communication.

*Bug fixes:*

- If 'Auto-sync system data' is off, a manual request for the GS-10's system data no longer fails. Similarly, if 'Auto-sync temporary patch' is off, a manual request for the GS-10's temporary patch no longer fails.
- Previously, if the name of the current control surface preset contained a dot, this preset would not be automatically selected upon a restart of GS-10 Manager. This has been corrected.
- The link to the Mountain Utilities web site installed in the Windows start menu has been updated.

### **Version 2.1.3 (2009-11-02):**

All references to the Mountain Utilities web site have been updated from 'home.hetnet.nl' to 'home.kpn.nl'. Hence the automatic update mechanism will work again.

### **Version 2.1.2 (2009-08-06):**

- Facilities for automatic and manual checking whether an update of GS-10 Manager is available from the Mountain Utilities web site.
- The package uses a different installer (Inno Setup instead of InstallShield). Consequently, the zip file's size has gone down from 4.5 MiB to 0.9 MiB! You may also note a few minor differences in the installation procedure; I have tried my best to make sure that the installation still runs smoothly, but do let me know if you encounter any problems due to the new installer.

### **Version 2.1.1 (2009-07-08):**

- The registration of file types ('.gst' etc.) no longer causes GS-10 Manager to terminate on startup under a 'limited account' (XP) or 'standard user' (Vista) or if Vista's UAC is on.
- The 'Soft FCB1010' window now scales correctly under non-standard DPI settings.
- A 3D-look has been added to many icons.



### **Version 2.1.0 (2009-07-05):**

- Support for the FCB1010's Tap Tempo feature, as implemented in FCB1010 firmware version 2.50.1E.
- Pressing the Esc key closes the Meter and Tuner windows.
- A tiny problem concerning the buttons in the Colors dialog box has been solved.
- Many internal improvements to the MIDI input/output engine.
- GS-10 Manager no longer produces messy windows and dialog boxes under non-standard DPI settings.

### **Version 2.0 (2007-04-18):**

- Totally new features:
  - FCB1010 editor
  - Assign Wizard
  - Use of the GS-10 as a control surface
  - MIDI input message window
  - 'Window list' dialog box for quick navigation to any open window
- The installer has been upgraded, so the setup problems under Windows XP reported by some users should no longer occur.
- In the patch tables, individual Assigns (1-8) can be displayed in individual columns.
- The output levels of the selected Slicer pattern are displayed graphically.
- The knob for the Low Cut Filter parameter in the Flanger effect is now displayed correctly.

### **Version 1.0.5 (2005-08-29):**

- GS-10 Manager now interprets Control Change data from MIDI (foot) controllers (linked via GS-10 Manager's soft MIDI thru) exactly as the GS-10 does.
- In the user patch window, the 'partial replace' and 'remove duplicates' operations now update the user patches on the GS-10 correctly.
- The 'Export patch names to instrument file' operation has been added to the main window.
- The 'Export to SysEx' operation has been added to the user patch window.
- GS-10 Manager's startup logic has been improved in several respects.

### **Version 1.0.4 (2005-08-03):**

- When user or preset patches are loaded from the GS-10, the 'Keep existing Info/Comments' dialog box no longer freezes.

### **Version 1.0.3 (~2005-07-31):**

- In the Effects window the underlining below the letter 'P' in Preamp/Speaker's Presence knob has been removed, so that pressing Alt+P now correctly opens the Patch pull-down menu, instead of selecting the Presence knob.

### **Version 1.0.2 (2005-07-30):**

- Invalid MIDI *input* devices are now correctly ignored too.
- GS-10 Manager now gives the GS-10 more time to process MIDI data sent from the computer. This should make the error message 'No response from GS-10' much less common. (However, a slight disadvantage is that large-scale operations like sending all the user patches to the GS-10 now take somewhat longer than in previous versions.)

### **Version 1.0.1 (2005-07-28):**

- If your computer system contains anomalous, invalid MIDI output devices, GS-10 Manager now simply ignores these devices, instead of refusing to start up.

- The MIDI devices dialog box now behaves correctly if there are no MIDI input or output devices.

**Version 1.0.0 (2005-07-22):**

First published version.

### 3. Computer requirements

To run GS-10 Manager, your computer must comply with the following requirements:

- Processor: Any Intel 80486- or Pentium-compatible CPU. Processor speed is relatively unimportant.
- Operating system: as of version 2.2.0, GS-10 Manager only runs under Windows operating systems that support Unicode, such as Windows 2000, XP, Vista and 7.
- An SVGA-compatible graphical card and monitor, capable of a resolution of at least 800×600 pixels.
- A mouse.
- Free hard disk space: about 12 MiB.
- RAM: when running, GS-10 Manager occupies roughly 10 MiB.
- GS-10 Manager runs perfectly without a MIDI link to an actual GS-10, but if you want to establish a real-time connection between GS-10 Manager and your GS-10, the GS-10 must be linked to the computer via MIDI input and output ports, preferably the GS-10's USB-based 'BOSS GS-10 Control'. See the GS-10's Owner's Manual on how to install the MIDI drivers.

## 4. Installation of GS-10 Manager

Three editions of GS-10 Manager are available: an installer, a 32-bit portable edition and a 64-bit portable edition.

Installer:

1. Download GS10Man-a.b.c-install.exe (where *a.b.c* stands for the actual version number) to your computer from the GS-10 Manager page at the Mountain Utilities web site (<https://mountainutilities.eu/gS-10manager>).
2. Run GS10Man-a.b.c-install.exe and follow its instructions. The installer automatically installs the edition of the actual application (GS10Man.exe) that matches the operating system: the 32-bit edition on a 32-bit Windows system, the 64-bit edition on a 64-bit Windows system.

Note: the installation includes an uninstaller. It can be run from the Windows Start Menu via Programs → Mountain Utilities → GS-10 Manager, or via Settings → Control Panel → ‘Add or Remove Programs’ (Windows XP) or ‘Programs and Features’ (Windows Vista and later).

Note that when you install a new version of GS-10 Manager, you do *not* have to uninstall any previously installed version first: the old version will be replaced with the new version automatically.

Portable (32- or 64-bit):

1. Download GS10Man-a.b.c-xnn-portable.zip (where *a.b.c* stands for the actual version number and *xnn* is ‘x64’ or ‘x86’) to your computer from the GS-10 Manager page at the Mountain Utilities web site (<https://mountainutilities.eu/gS-10manager>). The ‘x64’ (64-bit) edition only runs on 64-bit Windows, the ‘x86’ (32-bit) edition on 32- and 64-bit Windows.
2. Unzip GS10Man-a.b.c-xnn-portable.zip completely (maintaining the zip file’s tree structure) to any folder to which GS-10 Manager itself (GS10Man.exe) will have write-access (which is necessary for its configuration files). Crucially, in Windows Vista and later you should *not* unzip to a subfolder of C:\Program Files or C:\Program Files (x86), since these folders are subject to Windows’ UAC (User Access Control), which means that GS-10 Manager would *not* have write-access.

### Running GS-10 Manager itself

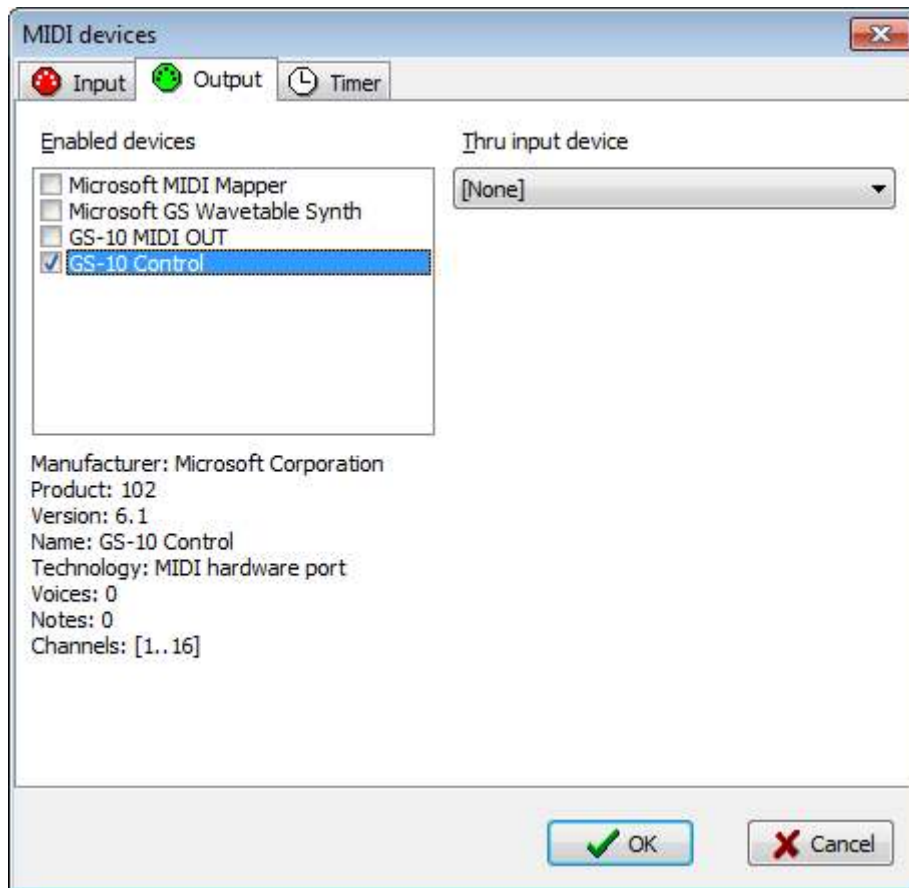
After installation, you can start GS-10 Manager itself (GS10Man.exe), e.g. via the Windows start menu. It is highly advisable to switch on your GS-10 *before* starting GS-10 Manager. In fact, this is *crucial* for *USB* connections (though not for standard MIDI connections), because GS-10 Manager can only work with USB ports that are active the very moment when GS-10 Manager is being started. No matter what connection you’re using, the advantage of having your GS-10 switched on at the moment when you start GS-10 Manager, is that GS-10 Manager should then be able to immediately autodetect your GS-10.

If you have never run GS-10 Manager (in any version) from the installed operating system before, the program notifies you that it can’t find your configuration. This is normal: the program saves its configuration file (GS10Man.ini) whenever the program *terminates*, so obviously this configuration file doesn’t exist yet when you start the program for the very first time. The program also notifies you if the configuration file does exist but belongs to a previous version; all existing settings are retained.

## 5. MIDI setup

You must tell GS-10 Manager manually where to find your GS-10. This involves the following steps:

1. You must ensure that the pertinent MIDI I/O ports are *enabled* in GS-10 Manager:  
From the main window's Options pull-down menu, 'MIDI devices' opens a dialog box in which you can select the MIDI I/O devices to which GS-10 Manager connects:



Enabling the proper I/O devices is relevant in several ways:

- If you want GS-10 Manager to communicate with a GS-10, the MIDI input and output ports connected to this GS-10 need to be 'enabled' here.
- More in general, *all* GS-10 Manager's MIDI utilities (including those not directly related to GS-10s) can only exchange data via MIDI devices that are 'enabled'.
- If you want to run other programs using MIDI devices simultaneously, it may be a good idea to keep as many MIDI devices disabled as you can in GS-10 Manager, in order to avoid access conflicts.

Tip: In the MIDI devices dialog box you can also set up a 'soft MIDI thru' link, by connecting an enabled MIDI input to an enabled MIDI output device. Any MIDI message received by the MIDI input device is then immediately passed on to the MIDI output device. In fact, you can set up as many links as there are devices; the only restriction is that each device can have only one connection.

2. You must set the GS-10's MIDI I/O ports and its Device ID to the correct values: From the main window's 'Options' pull-down menu, 'GS-10' opens a dialog box in which you can select the MIDI I/O ports to which the GS-10 is connected and the GS-10's Device ID. See §? for further discussion.

## MIDI pipes

Of particular interest is the enabling/disabling of 'MIDI pipes'. 'MIDI pipe' is my term for what is commonly known as a 'virtual MIDI device'. This is software that manifests itself as a virtual MIDI output port plus a virtual MIDI input port: the driver passes any MIDI data sent to the output port to the input port. Hence, when a computer program sends data to the virtual MIDI output port, this data can be picked up at the corresponding input port by any other computer program. Thus, a MIDI pipe allows inter-program MIDI communication. If a MIDI pipe driver is 'multi-client', we can connect more than one program (up to a particular maximum) to the same virtual output or input port.

To my knowledge, the following free MIDI pipe drivers are available (please contact me if you know any others):

- **Hubi's Loopback Device:** 4 multi-client pipes, but for Windows 9x only.
- **Sony/Sonic Foundry Virtual MIDI Router:** 4 single-client pipes. Windows 32-bit only.
- **Hurchalla Maple:** 12 single-client pipes. Windows 32-bit only.
- **LoopBe1:** only 1 multi-client pipe, so not very useful. (No, you can't install more than one copy!) Windows 32-bit only.
- **LoopBe30:** 30 multi-client pipes, but the trial version only works for a brief period, and the full version is not free. Windows 32-bit only.
- **MIDI Yoke** (<http://www.midiox.com/>): the NT (/2000/XP/Vista/7/8(?)) version allows up to 16 multi-client pipes, so understandably this has been the most popular MIDI pipe driver for 32-bit Windows versions.
  - Problems:
    1. MIDI Yoke's NT version, even though it is 32-bit, *can* be installed under 64-bit operating systems, but (reportedly) the pipes are only accessible to 32-bit DAWs, not to 64-bit DAWs.
    2. To work with MIDI Yoke correctly under Windows versions with UAC (User Access Control) you must apply a manual tweak:

The MIDI Yoke installer tries to create MIDI Yoke's configuration file (MYOKENT.INI) in C:\Windows, but the operating system doesn't allow this and actually creates it in C:\Users\Username\AppData\Local\VirtualStore\Windows. On the other hand, the MIDI Yoke configuration applet under Control Panel *does* have write access to C:\Windows and will create a second copy of MYOKENT.INI there when you change the settings. However, the latter file will never be seen by the *driver* (because the operating system keeps redirecting it to the copy in ...\VirtualStore\Windows); in other words, the driver 'won't listen to you.'

To fix this, you must manually remove MYOKENT.INI from C:\Users\Username\AppData\Local\VirtualStore\Windows or move it to C:\Windows, using administrator rights.

3. As discussed below, the NT version of MIDI Yoke may slow down the termination of MIDI Tools.
- **CopperLan** (<http://www.copperlan.org/>):  
Available for macOS and Windows (32- and 64-bit).  
This is primarily a MIDI-over-Ethernet system, so it's a bit of overkill if you only need local MIDI pipes. (CopperLan 1.4 for Windows installs *three* drivers, if I remember correctly!)  
It offers up to 32 virtual MIDI input ports and 32 virtual MIDI output ports; by default none of these are set up as 'pipes', but you can manually connect any output to any input (although the idiosyncratic user interface makes this much more difficult than it should be).
  - **loopMIDI** (<https://www.tobias-erichsen.de/>):  
This allows you to create and destroy any number of MIDI pipes on the fly.  
Simple and effective, so probably the best choice on modern Windows versions (particularly 64-bit versions, given MIDI Yoke's problems on those).

If configured improperly, MIDI pipes can easily cause problematic MIDI signal paths. There are several dangers:

**Duplication:**

If there is first a *split* in the signal path, and then a *merge*, two or more copies of the same MIDI message arrive at the end of the signal path (i.e. the target MIDI device). This is time-consuming at best, and may even lead to communication errors.

**Feedback:**

In general, feedback involves the return of a sent MIDI message to the same MIDI hardware device or computer program that sent the message. Obviously this needlessly slows down operation, although it isn't necessarily disastrous. However, there may also be more sinister effects. For instance, feedback may interfere with the program's communication with the MIDI device; this can result in many types of error.

At the very least you should normally avoid enabling both the output port and the input port of the same MIDI pipe in the same program (e.g. GS-10 Manager), because by definition anything you send to a MIDI pipe's *output* port (the pipe's starting point) is returned at the corresponding MIDI pipe's *input* port (the pipe's end point). So for instance, if you enable both 'Out To MIDI Yoke: 1' and 'In From MIDI Yoke: 1' in a program, then any MIDI data the program sends to 'Out To MIDI Yoke: 1' is returned to the program at 'In From MIDI Yoke: 1'. This type of feedback is usually undesired, except perhaps for monitoring purposes.

The most severe type of feedback occurs when the sender/recipient actually *re-sends* the returned MIDI message: this leads to an infinite loop, which may well grind the sender/recipient (and indeed the whole computer) to a virtual standstill.

In GS-10 Manager this horror can happen if you enable the MIDI Thru feature in the MIDI devices dialog box for an input-output pair already exhibiting feedback. For instance, if you activate MIDI Thru from 'In From MIDI Yoke: 1' to 'Out To MIDI Yoke: 1' in GS-10 Manager's MIDI devices dialog box, then any MIDI data sent to 'Out To MIDI Yoke: 1' not only comes back to GS-10 Manager at 'In From MIDI Yoke: 1' (via MIDI Yoke's pipe 1), but is then automatically *re-sent* from 'In From MIDI Yoke: 1' to 'Out To MIDI Yoke: 1' via the MIDI Thru feature, in principle ad infinitum, although MIDI Yoke does perform some checks that spot and kill the infinite loop — but still...

**Close delay:**

This problem only occurs with MIDI Yoke NT 1.75 (but *not* with MIDI Yoke *for Windows*)

95/98/Me): closing any MIDI Yoke NT *input* port causes a delay of 1 second. (Certain earlier versions even 3 seconds.)

Concerning GS-10 Manager this is mainly relevant during program exit. In principle GS-10 Manager terminates almost instantly upon exit, but when all the input ports of MIDI Yoke NT 1.75 are enabled, termination of GS-10 Manager takes some 16 seconds longer than normal! Therefore you should disable as many MIDI Yoke NT input ports as possible in GS-10 Manager's MIDI devices dialog box, i.e. any MIDI Yoke NT input ports that GS-10 Manager itself doesn't use. (Note that you can still use any MIDI ports disabled in GS-10 Manager in *other* programs!)

To help you avoid some of the serious problems discussed above, GS-10 Manager takes the following steps:

- On *first* startup, if GS-10 Manager detects any of the MIDI pipes listed above (excluding CopperLan, since by default its virtual ports aren't interconnected), it asks you if you want to enable the I/O devices of these pipes. It's best to answer *No* (to avoid feedback loops, and to avoid MIDI Yoke NT's close delays during GS-10 Manager's exit procedure), unless some other program (e.g. MIDI-OX) is routing a GS-10 through a MIDI pipe.
- On *every* startup, GS-10 Manager optionally warns you if any MIDI Yoke NT input ports are enabled and thereby cause extra delays during termination of GS-10 Manager. You can enable/disable this warning on the Input tab of the MIDI devices dialog box.



## 6. File formats

GS-10 Manager opens and saves many different file formats: all the formats supported by GS-10 Editor and Librarian, and some extra ones:

### **GS-10 Editor (gse)**

This is GS-10 Editor's native format. Most importantly, a gse file contains the current System settings (including e.g. the Custom settings) and the Temporary Patch data. However, it also contains a lot of superfluous data (e.g. the Quick FX names, which are always the same anyway), so that it is unnecessarily big: the System and Temporary Patch together take less than 4 KiB, but a gse file is an incredible 167 KiB! For this reason I do not recommend using the gse format, unless you absolutely have to, for instance if you wish to interchange data with the Mac version of GS-10 Editor. (But even then it might be simpler to use the Standard MIDI file format, which is also supported by GS-10 Editor, presumably also in its Mac version.)

### **GS-10 Librarian (gsl)**

This is GS-10 Librarian's native format for patch libraries. A gsl file contains a sequence of patches, where each patch is accompanied by four 'memo' fields. This is a very economical format; its only disadvantage is that it doesn't save any Custom settings. GS-10 Manager also uses this format to maintain the full set of user patches and the full set of preset patches.

### **Standard MIDI (mid)**

GS-10 Editor uses this for three types of data: System, Temporary Patch, and System + Temporary Patch. The data in these areas is saved as a sequence of MIDI System Exclusive messages embedded in a MIDI track, playable by MIDI sequencers. GS-10 Manager supports all three types. However, the main problem with mid files is that the file extension 'mid' itself is ambiguous: you can't see from the outside which type of data a mid file contains; therefore I do not recommend using this format unless you use a sequencer or somehow need to remain compatible with GS-10 Editor.

### **System Exclusive (syx)**

This is almost the same as the Standard MIDI format. The difference is that syx stores data as a 'naked' sequence of MIDI System Exclusive messages; that is: not embedded in a MIDI track. For this reason syx is a little more compact than Standard MIDI. Syx is often used by native editors for MIDI devices (e.g. the GT-*x* series), and many mid-syx conversion programs are available. However, GS-10 Editor and Librarian do not use it at all. GS-10 Manager does save and open syx files for System, Temporary Patch, and System + Temporary Patch, but syx is not GS-10 Manager's preferred format (again because the extension 'syx' is ambiguous). Note, however, that GS-10 Manager can convert GT-3 and GT-6 syx files to GS-10 patches.

GS-10 Manager also uses the syx format for FCB1010 data files.

### **GS-10 System (gss)**

This format is only used by GS-10 Manager. It is simply all the bare data from the System area – not even in the form of MIDI System Exclusive messages, so it is as compact as it gets without actually using file compression techniques. Although this compactness is nice, the main advantage of gss is that it is unambiguous, unlike mid and syx. The drawback is of course that it is not supported by GS-10 Editor, but you can always convert to mid or gse when required.

### **GS-10 Temporary Patch (gst)**

Like gss, this is only used by GS-10 Manager. This is nothing more than all the data from Temporary Patch. Again, very compact, and unambiguous.

**GS-10 System/Temporary Patch (gsx)**

This is basically a gss file plus a gst file: System + Temporary Patch. It is GS-10 Manager's much more compact version of a gse file.

**GS-10 Control Surface (gsc)**

This contains the mapping from the GS-10's knobs and buttons to a particular MIDI device. (Actually this is a text-format file, so you could edit it in any text editor, although there should be no reason to do so.)

**FCB1010 bank/preset names (fcb)**

This contains the 10 bank names and 100 preset names for the FCB1010 syx file of the same name in the same folder. (Actually, fcb files are in text format, so you could edit them in any text editor, although there should be no reason to do so.)

**Text (txt)**

In GS-10 Manager you can export any range of patches to a text file, which can then be read by any text editor or word processor. However, you cannot *open* such a file in GS-10 Manager.

## 7. The main window

GS-10 Manager's main window only consists of a pull-down menu, a toolbar, and a statusbar:



The status bar reports the number of patches currently on the clipboard.

The toolbar merely contains a number of buttons duplicating some of the most useful menu items.

The menu provides the following operations:

**File** → Open system + temporary patch:

Opens a file containing the System and Temporary Patch data. By default, you can select from any existing gsx files, but other types (mid, syx and gse) can be selected via 'Files of type'.

**File** → Reopen system + temporary patch → <1-10> <File name>:

Opens one of the 10 most recently loaded or saved system and/or temporary patch files.

**File** → Save system + temporary patch:

Saves the current system + temporary patch file.

**File** → Save system + temporary patch as:

Saves the System and Temporary Patch data to a file. By default this saves a gsx file, but other types (mid, syx and gse) can be selected via 'Files of type'.

**File** → New patch library:

Creates a new (as yet empty) patch library window.

**File** → Open patch library file(s):

Opens one or more gsl patch library files (each in its own, separate patch library window).

**File** → Reopen patch library file → <1-10> <File name>:

Opens one of the 10 most recently loaded or saved patch library files.

**File** → Export patch names → Text:

Exports a simple list of all user and preset patch numbers and names to a text file (with extension 'txt'). (You could load this text file in a text editor, then print it for a gig or so.)

**File** → Export patch names → Cakewalk instrument:

Exports all user and preset patch names to a Cakewalk instrument file (with extension 'ins'). If the global Map Select parameter is Fix, the user patch names end up in bank 0 and the preset patches in bank 1; if Map Select is Program, the Map values are used to define banks 0 and 1.

Cakewalk's MIDI sequencer programs (Pro Audio, Sonar etc.) can use these instrument files for assigning names to the Program Change numbers.

File → Exit:

Quits GS-10 Manager.

View → Temporary patch:

Opens the temporary patch window. See §9 for details.

View → User patches:

Opens the user patch window. See §11 for details.

View → Preset patches:

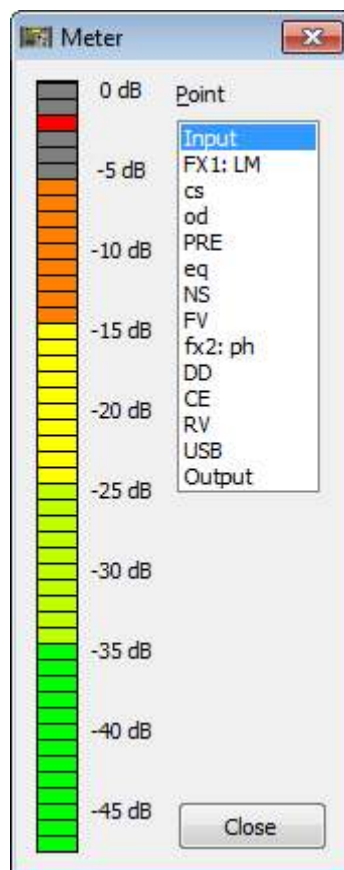
Opens the preset patch window. See §11 for details.

View → System:

Opens the system window. See §8 for details.

View → Meter:

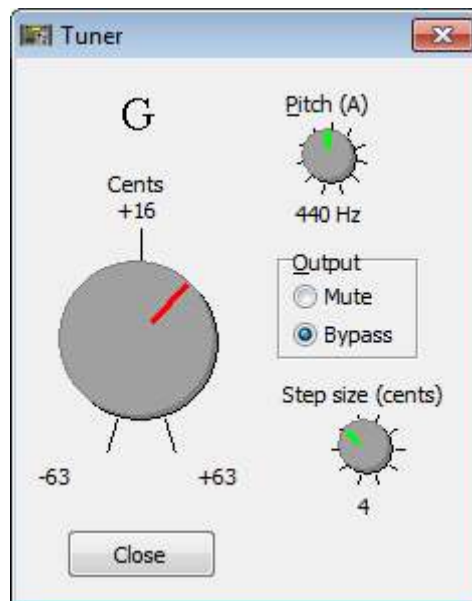
Only available if the GS-10 is connected. Puts the GS-10 in meter mode and opens a window showing the meter values reported by the GS-10:



Note: as far as I know, the GS-10 still accepts changes to the patch parameters while its meter mode is active, which can be very useful. (GS-10 Editor doesn't allow this.)

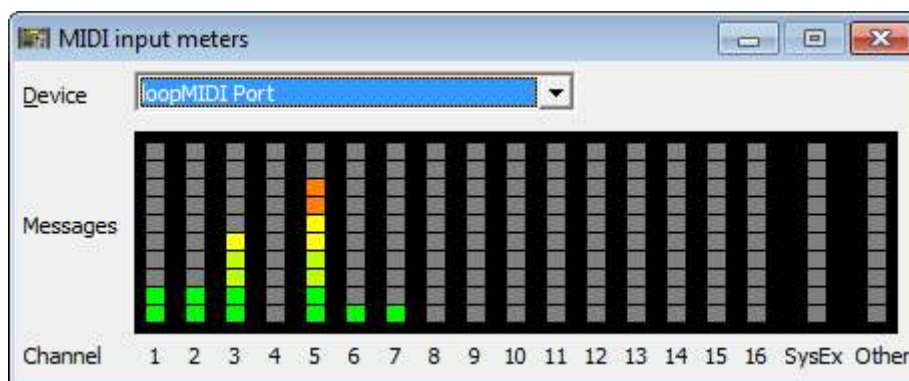
View → Tuner:

Only available if the GS-10 is connected. Puts the GS-10 in tuner mode and opens a window showing the tuning values reported by the GS-10:



View → MIDI → Input meters:

Opens a window showing the messages received recently from the MIDI input devices, via (logarithmic) LEDs per MIDI channel:



This window can be useful for troubleshooting your MIDI connections.

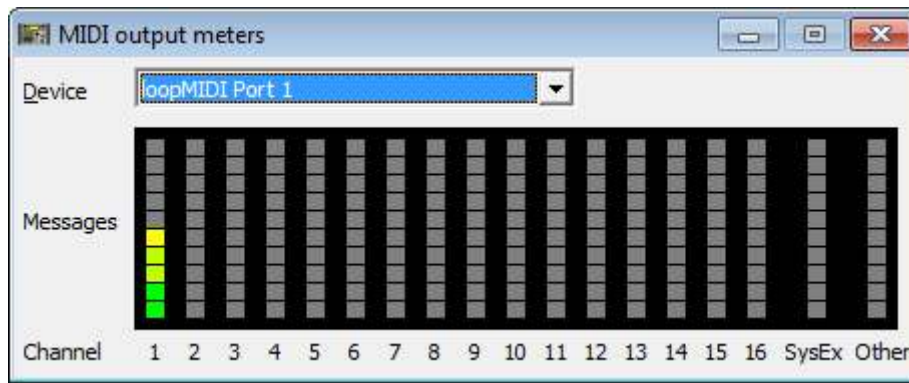
'DISABLED' in front of the selected MIDI input device indicates that the device is disabled, so no MIDI messages can currently be received from that device. (You can enable devices in the MIDI devices dialog box.)

View → MIDI → Input messages:

Opens the MIDI input messages window. Here you can record and view messages from the MIDI input devices. See §15 for more information.

View → MIDI → Output meters:

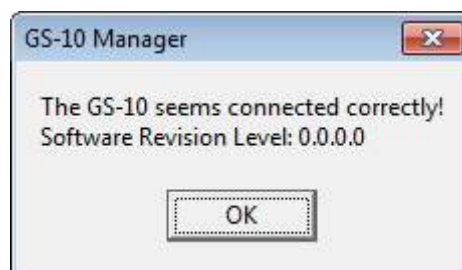
Opens a window showing the messages sent recently to the MIDI output devices, via (logarithmic) LEDs per MIDI channel:



This window can be useful for troubleshooting your MIDI connections. 'DISABLED' in front of the selected MIDI output device indicates that the device is disabled, so no MIDI messages can currently be sent to that device. (You can enable devices in the MIDI devices dialog box.)

View → MIDI → Test connection to GS-10:

This sends a MIDI identification request to the GS-10. You are notified if the GS-10 doesn't respond. If it does respond, the GS-10's version number is displayed:



View → FCB1010:

Opens a window containing commands related to the Behringer FCB1010 MIDI Foot Controller. See §13 for details.

View → Stay on top:

When this menu item is checked, GS-10 Manager's main window stays on top of any other windows belonging to GS-10 Manager. The main window also stays on top of other applications (except of course those that have the stay-on-top property too).

View → Skin:

Opens a window in which you can select the 'skin' of the application; apart from the default skin (called 'Windows'), there are 39 alternative skins. Most prominently, a skin defines the colors of all the visual elements of the application's windows, but a skin may also change the font type and/or size, or the shape or size of buttons etc.

Some tips:

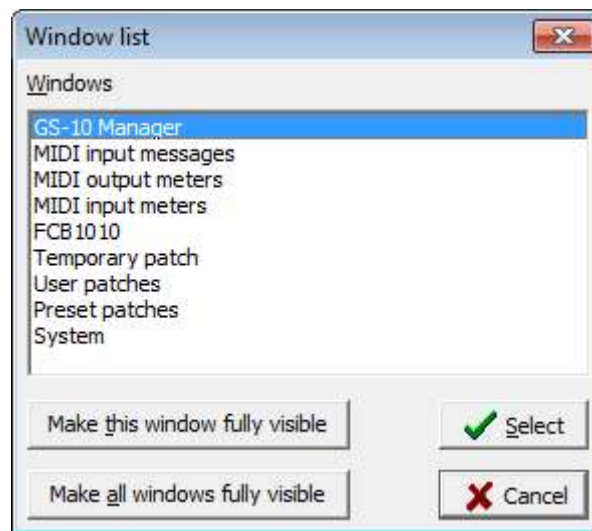
- The default 'Windows' skin isn't really a skin: it's simply the current interface of the Windows version you are running. So for instance if your computer is using an Aero theme on Windows 7, that's what the 'Windows' skin will give you; but on Windows 10 it will amount to the standard Windows 10 look.
- The six 'Windows 10 ...' skins are available on any Windows version, so you can make your Windows XP or 7 look like Windows 10! (However, there are subtle

differences between these skins and the *actual* Windows 10 interface.)

Disclaimer: The 39 alternative skins were not developed by Mountain Utilities, but are part of the Delphi programming environment on which this Mountain Utilities application is built. So these skins are offered on a take-it-or-leave-it basis. Some of these skins may cause undesired visual effects, such as certain screen elements disappearing behind others. However, due to the sheer number of these skins it would be a huge task to fine-tune every window of every Mountain Utilities application for every skin. So be prepared for some unpleasant and perhaps confusing surprises. If you encounter a 'really bad' problem, feel free to report it in the application's forum at the Mountain Utilities web site.

View → Window list:

Opens a dialog box that allows you to quickly navigate to any open window:



Note that the hotkey (Alt+0) for opening this dialog box works from almost *any* location in the program, not just the main window.

If the highlighted window is partially or completely outside the current monitor(s), you can move it into full view by pressing 'Make this window fully visible'. 'Make all windows fully visible' performs this operation on *all* windows in the list.

Options → MIDI devices:

Opens a dialog box in which you can configure the MIDI devices that GS-10 Manager monitors. This is relevant in two ways:

1. If you want GS-10 Manager to communicate with your GS-10, the MIDI input and output ports connected to your GS-10 need to be 'enabled' here. If the GS-10's USB connection is active when you start GS-10 Manager for the first time, the 'BOSS GS-10 Control' input and output ports are automatically enabled here; if not, you have to enable the desired ports manually.
2. Only monitored, 'enabled' devices can be used in the MIDI Input and Output windows opened via View → MIDI.

If you want to run other programs at the same time, it may be a good idea to keep the other devices disabled here to avoid conflicts.

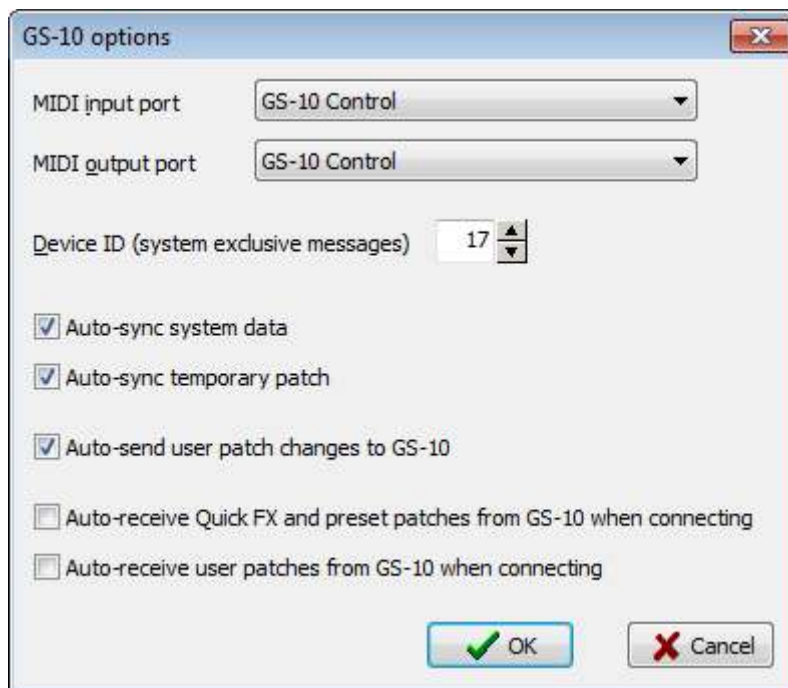
In this window you can also set up a 'soft MIDI thru' link, by connecting an enabled MIDI input to an enabled MIDI output device. Any MIDI message received by the MIDI input

device is then immediately passed on to the MIDI output device. (In fact, you can set up as many links as there are devices; the only restriction is that each device can have only one connection.)

If you want simultaneous control of the GS-10 by GS-10 Manager and an external MIDI foot controller (like the Behringer FCB1010), you should connect the input device where the foot controller resides to the 'BOSS GS-10 Control' output device. A nice touch: GS-10 Manager will then keep track of any control change messages sent from the foot controller to the GS-10, immediately updating the display of the effect parameters assigned to these control change messages, in accordance with the GS-10's response to these messages.

Options → GS-10:

Opens a dialog box in which you can set various options concerning the connected GS-10:



'MIDI input port' and 'MIDI output port' must be set to the ports to which your GS-10 is connected. These ports must have been 'enabled' in the 'MIDI devices' dialog box. Beware: whenever you want to use the GS-10's USB connection in GS-10 Manager, you must switch on the GS-10 *before* starting GS-10 Manager, because after GS-10 Manager has started, it cannot change its initial lists of available MIDI input and output devices. It is also good practice to exit GS-10 Manager before switching off the GS-10.

Ideally, the GS-10's USB connection should be active when you start GS-10 Manager for the first time: the GS-10's USB input and output ports ('BOSS GS-10 Control' in Windows XP/Vista; 'GS-10 Control' in Windows 7) are then automatically selected; otherwise you will have to select the desired ports manually.

For a proper connection, the Device ID value selected here should match the Device ID value on the GS-10 itself.

'Auto-sync system data' and 'Auto-sync temporary patch' should normally be left on: GS-10 Manager should then always mirror the GS-10's System and Temporary Patch data, and vice versa.



If 'Auto-send user patch changes to GS-10' is on, changing the data of a user patch in GS-10 Manager automatically updates the corresponding user patch on the GS-10.

'Auto-receive Quick FX and preset patches from GS-10 when connecting' is a 'paranoid' option. Since GS-10 Manager maintains copies of these GS-10 areas in files on the computer, this option can normally remain off. If this option is on, GS-10 Manager always reads them from the GS-10 instead, so that starting up GS-10 Manager will take considerably longer.

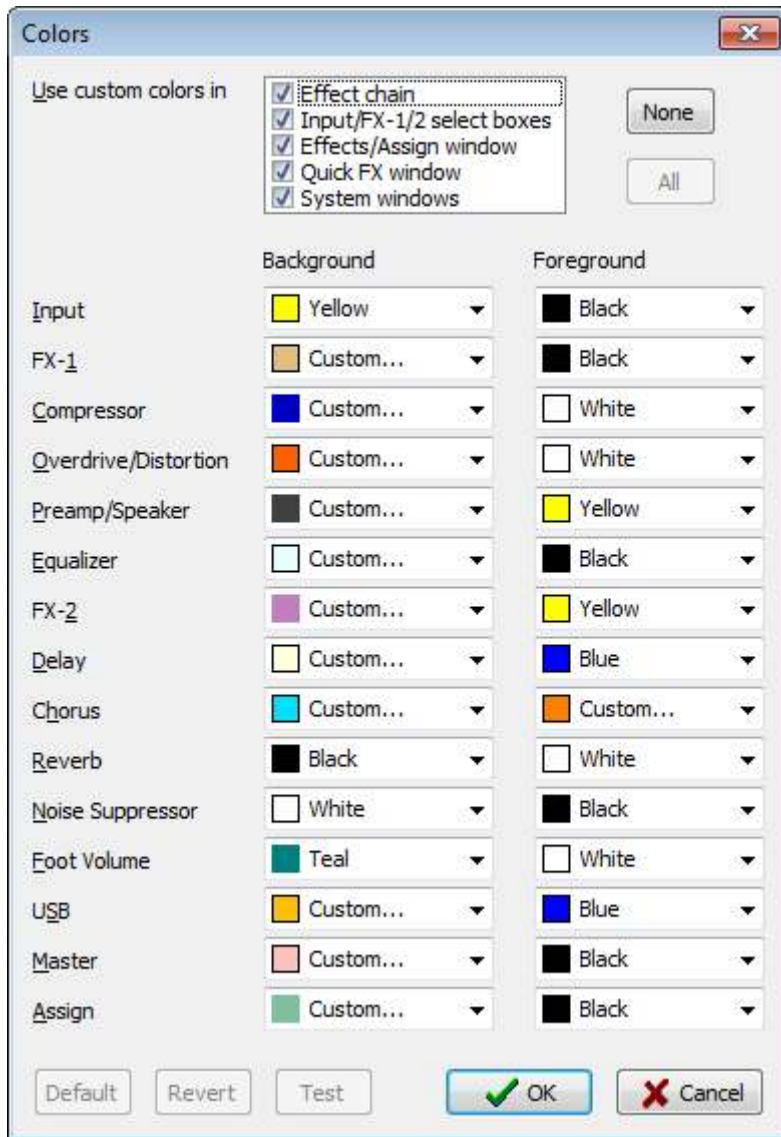
'Auto-receive user patches from GS-10 when connecting' is also rather paranoid and very time-consuming: if you don't change the GS-10's user patches behind GS-10 Manager's back, it should be possible to leave this option off. (You can always load any user patches from the GS-10 from within GS-10 Manager manually.)

Options → Control surface:

Opens a window from which you can manage GS-10 Manager's control surface facility. This facility allows you to control any MIDI device from the GS-10's knobs and buttons. See §[14](#) for details.

Options → Colors:

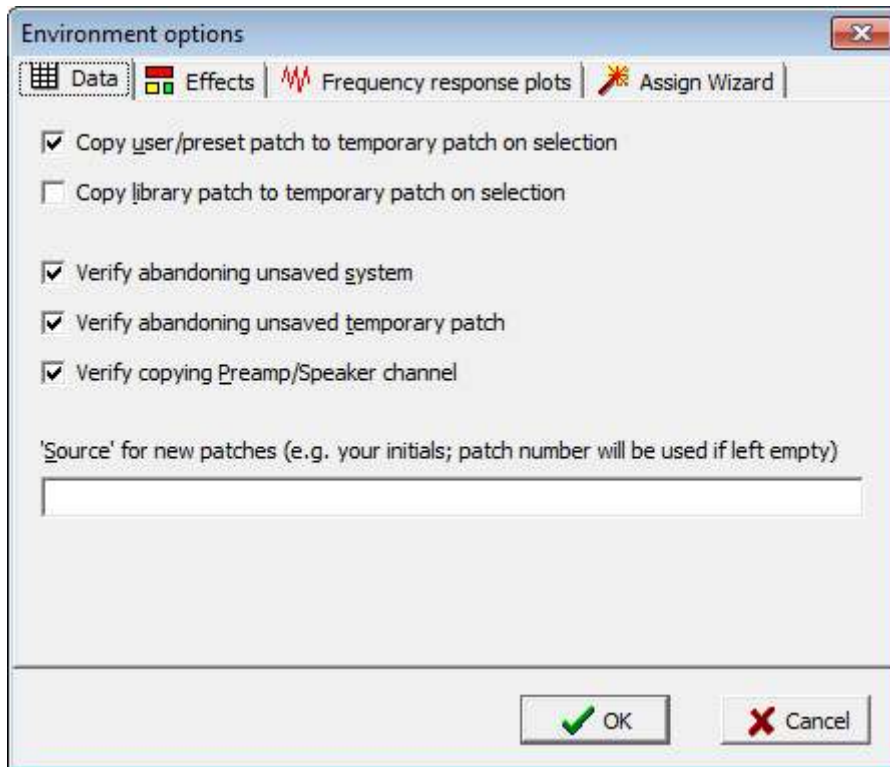
Opens a dialog box in which you can set the 'custom' colors that GS-10 Manager uses for displaying the effects, and where these custom colors apply:



Where these custom colors are *not* used, the operating system's standard colors are used.

Options → Environment:

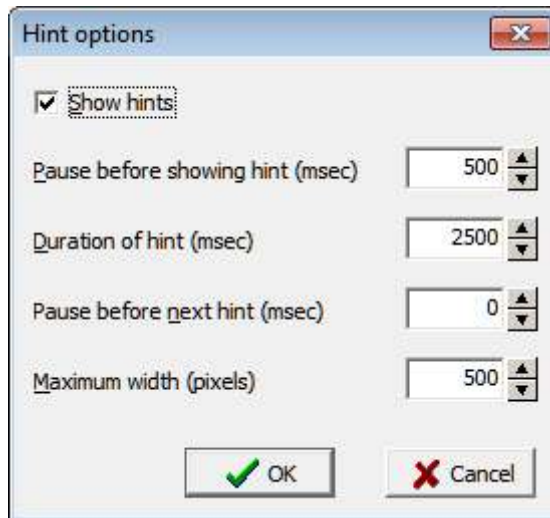
Opens a dialog box in which you can set various options affecting the way GS-10 Manager behaves, concerning changes to patch and system data, the display of effects, and the Assign Wizard:



Note: If you set ‘Verify abandoning unsaved temporary patch’ *on*, then a dialog box will ask you if you really want to overwrite the temporary patch whenever any patch is copied to an unsaved temporary patch. This question may then seem to pop up unnecessarily often. However, the cause of this may be that Assign Hold (on the System tab in the System window) is *on*: in that case a patch change will cause the GS-10 to *immediately* change certain temporary patch parameters *again*, namely those that are controlled by the expression or control pedals or an external MIDI foot controller. So the temporary patch may then indeed become ‘unsaved’ immediately after it has been loaded from the source patch. When this starts to get annoying, you can switch either Verify or Assign Hold off. Alternatively, you could reposition a pedal to the value usually occurring in the user patches (e.g. 100 for Foot Volume Level), whenever you don’t actually need to keep the pedal position the same across a patch change.

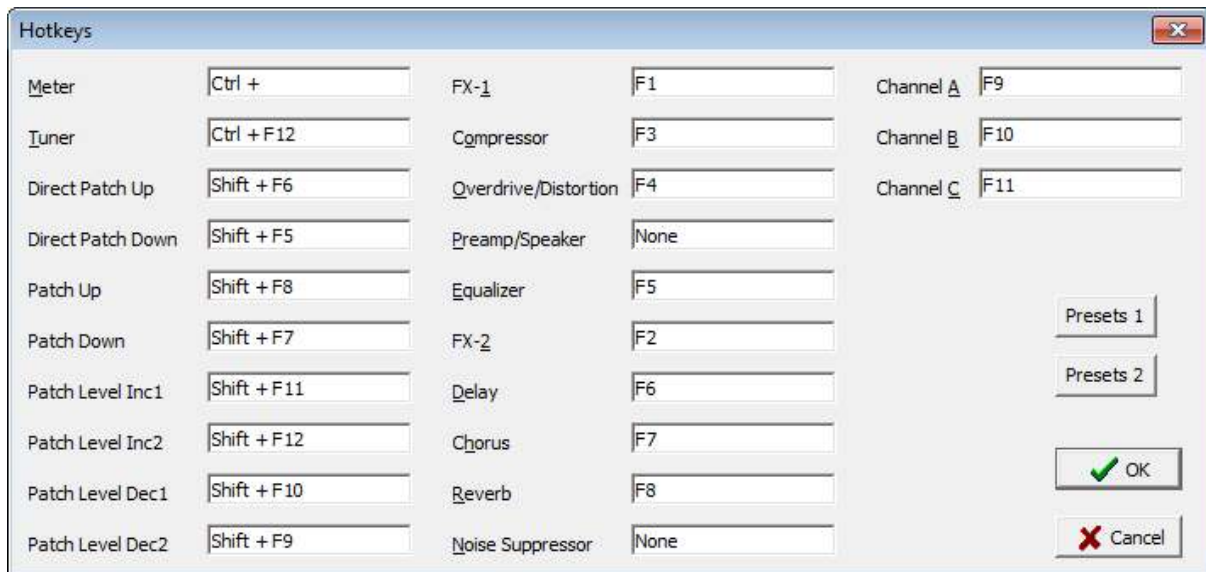
Options → Hints:

Opens a dialog box in which you can set options affecting the hints that are displayed when you move the mouse cursor over buttons etc.:



Options → Hotkeys:

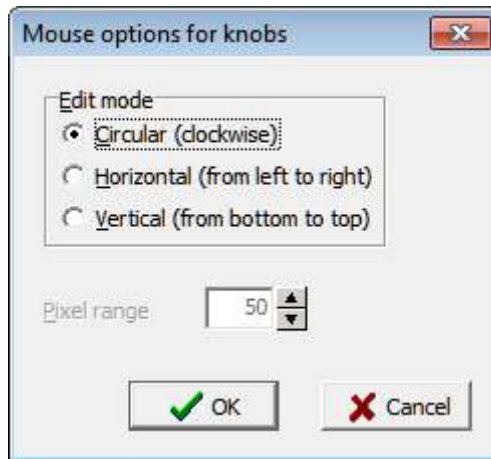
Opens a dialog box in which you can assign keyboard stroke combinations to various functions, like toggling a particular effect on and off:



The safest choices are probably the F1-F12 keys, possibly in combination with Alt, Ctrl and/or Shift. Note that GS-10 Manager doesn't check for conflicts between any of your choices (or indeed for conflicts with GS-10 Manager's standard keyboard behavior), so you're on your own in this respect.

Options → Mouse:

Opens a dialog box in which you can set the way in which the mouse turns the parameter knobs:



Options → Import GT-3:

Opens a dialog box in which you can set options that influence the way in which GT-3 patches are imported.

Options → Import GT-6:

Opens a dialog box in which you can set options that influence the way in which GT-6 patches are imported.

Note: The option 'Scale preamp gain by 120%' does *not* affect conversions from the GT-6's 'VO Clean' or 'MATCH Lead' preamp types. Instead, special conversion logic is used for 'VO Clean' and 'MATCH Lead'.

Help → Manual:

Opens this manual in the external application associated with the file extension 'pdf'.

Help → About GS-10 Manager:

Opens a dialog box containing information on GS-10 Manager, such as its version number and memory usage:

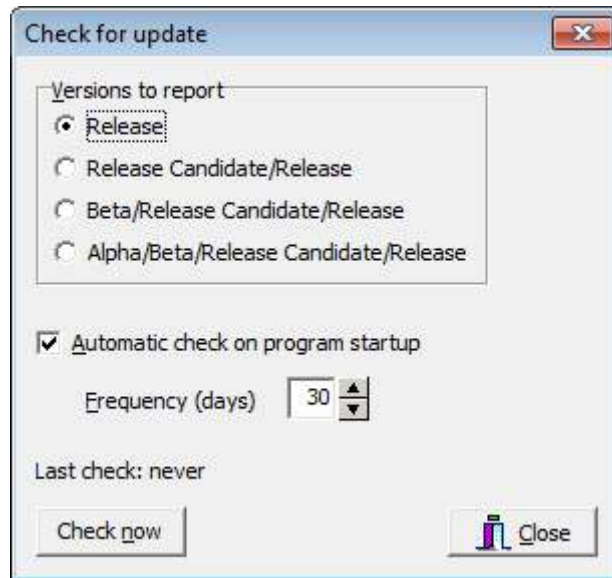


Help → Mountain Utilities web site:

Provided you're connected to the internet, your web browser opens the Mountain Utilities web site, where you can find up-to-date information about GS-10 Manager and other matters related to the GS-10.

Help → Check for update:

Opens a dialog box in which you can set the frequency at which GS-10 Manager automatically searches for updates at the Mountain Utilities web site, and which types of updates you are interested in:



If you set 'Versions to report' to 'Release', you will only be notified about Release versions. 'Release Candidate/Release' will also notify you about Release Candidate versions, etcetera.

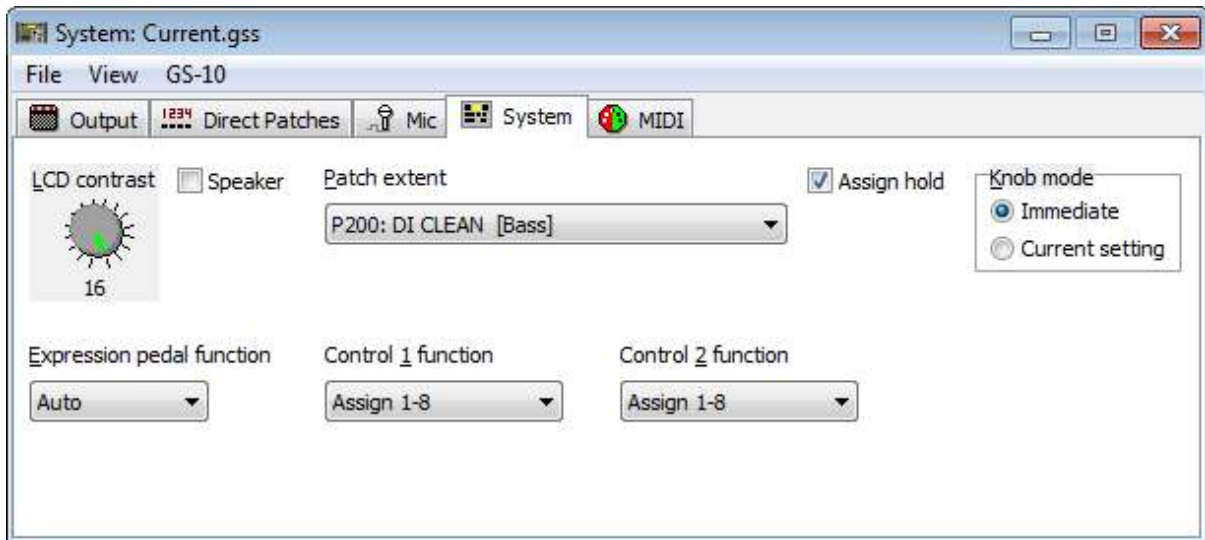
When an update is available, the program asks you whether you wish to open the pertinent web page at the Mountain Utilities site. You can also check for updates manually, by pressing the 'Check now' button.

*Note: If your firewall catches the program's connection attempt and asks you whether you want to allow this, you can safely say yes: no information identifying you or your computer will be sent to the Mountain Utilities web site.*

#### Help → Donate:

Makes your web browser open the Donate page at the Mountain Utilities web site (<https://mountainutilities.eu/donate>), at which you can express your appreciation of GS-10 Manager and support its further development by making a donation.

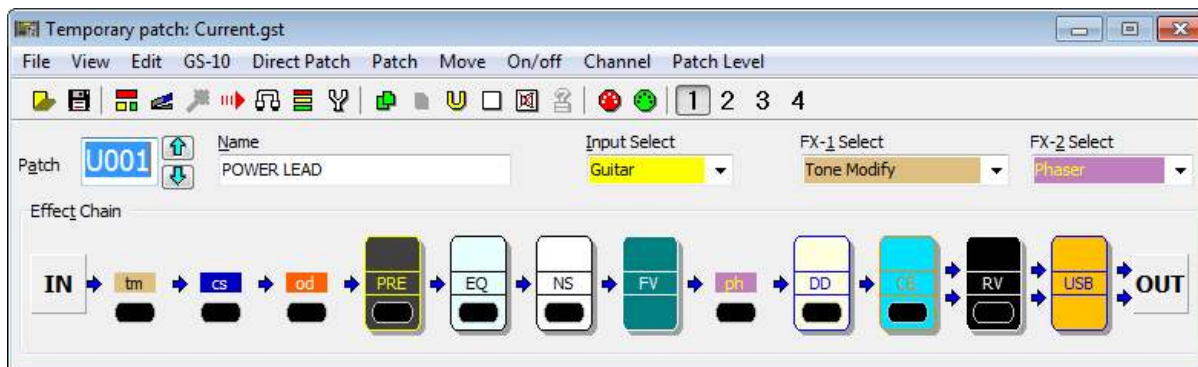
## 8. The System window



The System window is GS-10 Manager's main access to the GS-10's System data. Via its pull-down menu you can load and save this data from and to a file, or load/save it from/to the GS-10. The data are displayed on the various 'tab' pages, or via separate windows that can be opened from the menu.



## 9. The Temporary Patch window



The Temporary Patch window is GS-10 Manager's main access to the GS-10's Temporary Patch data. In this window you can edit several important patch fields, such as the patch name, the effect on/off-switches, and the effect order. However, the parameters *within* the effects are displayed in the separate Effects window, which can be opened via the pull-down menu.

A few remarks on the effect chain:

- You can select either left-to-right or right-to-left order via the main window's Options → Environment dialog box.
- The mono/stereo flow is indicated by the number of arrows between the effects: one arrow indicates (you guessed it!) a mono signal, two arrows a stereo signal. Normally these arrows are blue; however, if the *previous* signal was stereo and that stereo image has got lost, then the arrow(s) is/are red, as an indication of a possibly non-optimal situation. (Refer to the [GS-10 Stereo.pdf](#) document in the Yahoo group's Files section for more information.)
- The following keystrokes and mouse clicks apply to the stompboxes:

Key(s)/mouse click	Action
Left	Select the stompbox on the left
Right	Select the stompbox on the right
Space	Toggle the effect on/off
Alt+Home	Move the stompbox to the far left
Alt+Left	Move the stompbox one place to the left
Alt+Right	Move the stompbox one place to the right
Alt+End	Move the stompbox to the far right
Enter	Go to the selected effect in the Effects window
Left click	Select the stompbox under the mouse
Left click (black pad)	Toggle the effect on/off
Double click	Go to the selected effect in the Effects window (or to the USB window)

Right click and drag	Move the stompbox to the position where the right mouse button is released
----------------------	--

- A side-note on the position of the USB tap in the chain: I have discovered that the signal sent from the GS-10's USB tap to the computer is only affected by the Master Patch Level parameter if the USB tap is in *final* position: if the USB tap is placed anywhere else, Patch Level does *not* affect the USB signal! To clear up this confusion, the USB window's caption states whether Patch Level currently affects the USB tap.

Most of the Temporary Patch window's menu items speak for themselves. A few remarks:

Edit → Copy:

The temporary patch is copied to GS-10 Manager's patch clipboard.

Edit → Paste:

The (first) patch on GS-10 Manager's patch clipboard is copied to the temporary patch.

Edit → Partial replace:

A selectable set of effects/assigns from the (first) patch on GS-10 Manager's patch clipboard is copied to the temporary patch.

Edit → Write:

The temporary patch is copied ('written') to a selectable user patch.

Edit → Initialize:

The temporary patch is set to 'INIT PATCH'. Basically this patch just contains the Noise Suppressor.

Edit → Initialize (muted):

The temporary patch is set to 'MUTE PATCH'. This patch is identical to 'INIT PATCH', except that Foot Volume Level and Master Patch Level are 0, and Noise Suppressor is off. This patch could be used as a kind of 'panic button' to quickly kill the sound completely.

Edit → Initialize unused areas:

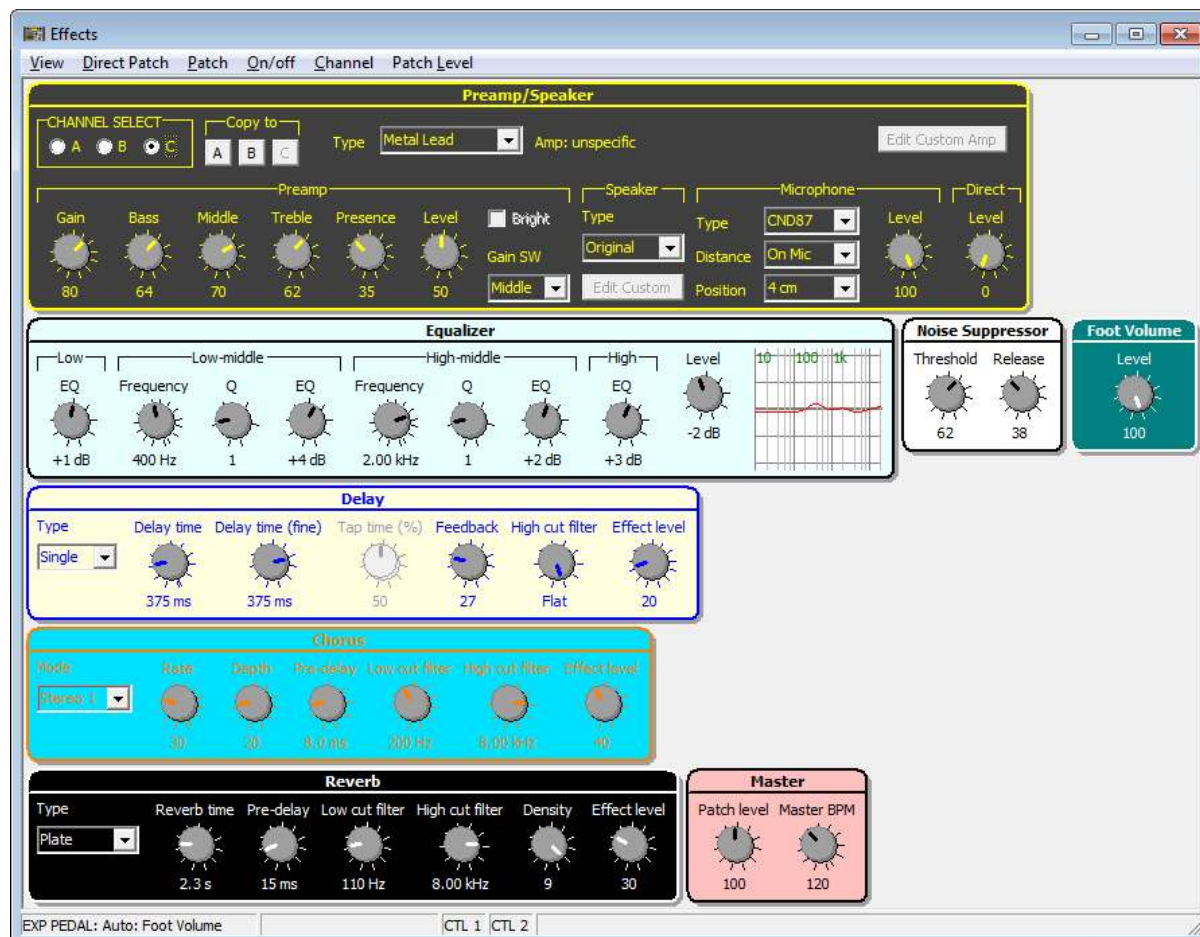
A selectable set of unused effects in the temporary patch is initialized. Since indeed only effects that are currently off are eligible for initialization at all, this is hardly an 'essential' operation, but it does remove all (potentially confusing) traces of messing around with the patch. In particular, this is useful for the 'Compare' operation (see below). On the other hand, you should be careful here not to inadvertently initialize 'alternate' effects (e.g. in the FX-1 or FX-2 groups) that you do want to keep.

Edit → Compare:

The temporary patch and the (first) patch on GS-10 Manager's patch clipboard are compared, on an effect-by-effect basis. The areas that are different in any way are listed in a dialog box. Note that any effects or assigns that are currently switched off are compared too; this includes *all* the 11 FX-1 effects and *all* the 18 FX-2 effects.

## 10. The Effects window

The Effects window contains all the effect parameters. Each effect has its own panel, and the effects are automatically ordered according to the effect chain:



Several alignment schemes can be set (via the Environment options dialog box): horizontal, vertical and mixed. 'Mixed' tries to fit the panels as well as possible into the current dimensions of the Effects window.

The value selected for 'Open effect panels' in the Environment options dialog box determines which effects are visible: the active effects can be displayed automatically, or you can visualize each effect manually.

Note that the left/right order of the effect panels is determined by the 'Effect chain display' parameter in the Environment options dialog box.

### The menu:

- Via the View pull-down menu you can show or hide individual effect panels.  
However, if you have chosen an 'automatic' mode for 'Open effect panels', any manual alteration is only temporary. For instance, a change to the effect chain order will revert to the display of precisely those effects chosen by the automatic method.

- Via the View pull-down menu you can open independent, big windows showing the frequency response plots of the Equalizer and Stereo Equalizer effects. (Stereo Equalizer is only available if the FX-2 Select parameter has been set to Stereo Equalizer.) Note that you can also open these independent windows by clicking on the corresponding *small* plots on the Equalizer and Stereo Equalizer panels.  
Overall these plots are highly accurate representations of the GS-10's actual behavior, with the following provisos:
  1. The plots for the Low EQ and High EQ parameters indeed represent the responses by the GS-10 *exactly*. However, as you can see, these responses are *incorrect* for values *below* 0 dB: from -1 dB to -18 dB the actual cuts aren't as big as they should be, but for -20 dB the actual response is around -25 dB!
  2. In some cases the displayed widths for the low- and high-middle parametric equalizers may still be a *tiny* bit off compared to the actual responses by the GS-10 – this may be fixed in a future version of GS-10 Manager.
- All the other pull-down menus simply contain duplicates of menu items in the Temporary Patch window.

### The status bar:

The Effects window contains a status bar at its bottom. This bar has four panels:

- The name(s) of the effect parameter(s) currently affected by the Expression Pedal (e.g. EV-5) connected to the EXP PEDAL socket at the back of the GS-10. (You can change the Expression Pedal's function via 'Expression pedal function' on the System window's System tab.)
- A horizontal bar, indicating the most recently received value from the Expression Pedal connected to the GS-10. For this to work, you must set the output controller number for the Expression Pedal to any value other than 'Off' (see the MIDI tab in the System window). Note that this panel remains empty as long as no Control Change value has been received, i.e. as long as you haven't physically moved the Expression Pedal's position.
- The status of the Control 1 and 2 foot pedals (CTL 1 and 2) connected to the GS-10.  
For this to work, you must set the output controller numbers for Controls 1 and 2 to any value other than 'Off' (see the MIDI tab in the System window). The controller numbers for CTL 1 and 2 must differ from each other, and they must also differ from the controller number for the Expression Pedal: otherwise GS-10 Manager will have no way of distinguishing between the different pedals (even though the Expression Pedal and CTL 1/2 are of course physically mutually exclusive).  
As long as no Control Change message has been received from a Control pedal, the corresponding panel's background has the default status bar color (usually gray). When the pedal is pressed, the background becomes red, and when the pedal is then lifted it becomes green.

## 11. The patch table windows

Each patch table window contains a table of patches:

Name	Date/Time	Source	Info	Comments	FX-1	CS	OD/DS	Ch. Select	Preamp A	Preamp B	Preamp C	EQ	NS	FX-2	Delay	Chorus	Reverb	Effect Chain	Assigns	
POWER LEAD	2003.07.15 01.00 P101							C	MS 1959(I)	Drive Stack	Metal Lead	+	+		Single	Stereo 1	Plate	*PRE-EQ-NS-FV-DD-CE-RV=USB=		
WARM CLEAN	2003.07.15 01.00 P102				LM			A	Warm Clean	Warm Clean	JC-120	+	+		Single	Stereo 1	Hall 1	*LM-PRE-NS-FV-DD-CE-RV=USB=		
BRIT VALVES	2003.07.15 01.00 P103					+		B	VO Drive	MS 1959(I)	MS HIGain	+	+					Hall 2	*CS-PRE-EQ-NS-FV-RV=USB=	
METAL MASTERS	2003.07.15 01.00 P104							A	T-Amp Lead	R-FIER Red	5150 Drive	+	+		Pan			Plate	*PRE-EQ-NS-FV-DD-RV=USB=	
ATTIC AMPS	2003.07.15 01.00 P105					+		B	Pro Crunch	Clean TWIN	VO Lead	+	+					Plate	*CS-PRE-NS-FV-RV=USB=	
WARM OVERDRIVE	2003.07.15 01.00 P106						T-Scream	B	Fat MATCH	Crunch	VO Drive	+	+					Ambience	*OD-PRE-NS-FV-RV=USB=	
1969 VIBE	2003.07.15 01.00 P107						'60s FUZZ	B	MS 1959(I)	MS 1959(I)	Power Stack	+	+	UV				Room	*OD-UV-PRE-NS-FV-RV=USB=	
CLASSICAL ROCK	2003.07.15 01.00 P108				TM		T-Scream	B	Pro Crunch	MS 1959(I)	MS HIGain	+	+		Single			Hall 1	*TM-OD-PRE-EQ-NS-FV-DD-RV=USB=	

There are three types of patch table windows: in the case of the user and preset patch windows, the table consists of exactly 100 items, corresponding to the 100 user and preset patches in the GS-10 itself; in the case of a patch library window, the table can be as big as you like.

Note: effects are shown with an asterisk (\*) if they are *off* by default but may be activated by switching a linked *Assign on*.

The menu items for these windows are described below. Note that most of these commands can be triggered too by pressing the corresponding toolbutton on the toolbar immediately below the menu. Also note that not all commands are available in all types of window; in particular the preset patch window is naturally very restricted in its editing abilities.

File → Insert:

Inserts all the patches from one or more gsl patch library files in the window, at the position of the currently selected patch. (If more patches are in the file(s) than can be accommodated in the user patch window, the surplus is simply ignored.)

File → Open:

Only available in the preset patch window. This attempts to load all preset patches from a gsl file (no matter which preset patch is currently selected). The file should contain exactly 100 patches. Normally you never need to perform this, since GS-10 Manager maintains the preset patches file (by default 'Presets.gsl') automatically.

File → Save:

Saves all the patches in the window to the current gsl file (as shown in the title bar).

Note that this overwrites the old file without asking the user for verification, unless the window hasn't been saved before, in which case 'Save' translates to 'Save As' (see below).

Also note that you can even save the *preset* patch table to a file. Of course you cannot change the data in the preset patches *themselves*, but you *can* change their four 'memo' fields: this might be useful for adding your own comments to these patches.

File → Save As:

Saves all the patches in the window to a gsl file (selectable by the user).

File → *n* <File name>

Opens one of the 10 most recently loaded or saved gsl patch library files, where *n* is a number from 1 to 10.

File → Import → GT-3:

Imports GT-3 patches from one or more syx files. The converted patches are inserted in the window. (If more patches are in the file(s) than can be accommodated in the user patch window, the surplus is simply ignored.)

For patches converted from the GT-3 it's probably best to set the GS-10's 'SYS: EXP PDL Func' to 'Assign 1-8' if you have an expression pedal attached to the EXP PEDAL jack. In this way you can use these patches in the way they were intended, because GS-10 Manager's patch converter always assigns the patch parameter that the GT-3's on-board Expression Pedal controls to Assign 1. (If you use the pedal function 'Auto', the pedal only ever controls the Foot Volume or Pedal Wah/Pedal Bend parameters.)

Note: you can set options influencing this conversion process from the main window: Options → Import GT-3.

File → Import → GT-6:

Like 'Import GT-3' (see above), but now expecting GT-6 patches.

In this case it's probably best to set the GS-10's 'SYS: EXP PDL Func' to 'Auto' if you have an expression pedal attached to the EXP PEDAL jack.

Note: you can set options influencing this conversion process from the main window: Options → Import GT-6.

File → Export to SysEx:

Only available in the user patch window. Exports the selected (highlighted) patch(es) to a system exclusive file (extension 'syx').

Beware: this operation does *not* export the memo fields, so it is generally not very useful. However, you could load the resulting syx file into a third-party MIDI sequencer program as a collection of system exclusive messages and then perhaps send these to the GS-10 from that program.

File → Export to text:

Exports the selected (highlighted) patch(es) to a text file. Note that GS-10 Manager cannot read *back* these text files, so you should not keep important patches *only* as text files: instead, you should always save patches to any of the 'native' file formats (gse, gsl, gst, gsx, mid or syx).

Edit → Cut:

The selected patch(es) in the window are copied to the GS-10 Manager's patch clipboard and removed from the window.

Edit → Copy:

The selected patch(es) in the window are copied to GS-10 Manager's patch clipboard.

Edit → Replace:

Only available in the user patch window. The patch(es) on GS-10 Manager's patch clipboard replace(s) the patch(es) in the window, starting at the first of the currently selected patches. If more patches are on the clipboard than can be accommodated, the surplus is simply ignored.

Edit → Paste:

Only available in the patch library windows. The patch(es) on GS-10 Manager's patch clipboard are inserted in the window, before the first of the currently selected patches.

Edit → Partial replace:

A selectable set of effects/assigns from the patch(es) on GS-10 Manager's patch clipboard is copied to the selected patch(es).

This is done on a patch-by-patch base: the first selected patch receives the chosen effects from the first patch on the clipboard, the second selected patch from the second patch on the clipboard, etc. If more patches are selected than there are patches on the clipboard, a rotational method is applied: after the patches on the clipboard are through, the first patch on the clipboard is used again, and so on.

**Edit → Initialize:**

Only available in the user patch window. The selected patch(es) are initialized to the standard 'INIT PATCH'.

**Edit → Delete:**

Only available in the patch library windows. The selected patch(es) are deleted from the window.

**Edit → Initialize unused areas:**

A selectable set of unused effects in the selected patch(es) is initialized. Since indeed only effects that are currently off are eligible for initialization at all, this is hardly an 'essential' operation, but it does remove all (potentially confusing) traces of messing around with the patches. In particular, this is useful for the 'Compare' operation (see below). On the other hand, you should be careful here not to inadvertently initialize 'alternate' effects (e.g. in the FX-1 or FX-2 groups) that you do want to keep.

**Edit → To temporary patch:**

Copies the first selected patch to the temporary patch. (Refer to the Data tab in the Environment options dialog box to automate this.)

**Edit → Edit name/memo fields (can also be performed by double-clicking on a patch in the table):**  
Opens a dialog box in which you can edit the name and memo fields of the selected patch(es).

GS-10 Librarian's 'memo' fields (1-4) are renamed in GS-10 Manager (this is purely cosmetic):

Memo1 → 'Date/Time' (format YYYY.MM.DD HH.MM)

Memo2 → 'Source' (e.g. the file name or the creator's name)

Memo3 → 'Info' (presumably by the patch creator)

Memo4 → 'Comments' (presumably by the user)

For all these fields except 'Date/time' you can create texts, i.e. spanning multiple lines. (GS-10 Librarian accepts multiple lines as well, although it doesn't display them nicely, and you cannot edit them easily in GS-10 Librarian.)

**Edit → Select all:**

All the patches in the window are selected (for copying, cutting etc.).

**Edit → Find Patch Name:**

Searches the Patch Name fields in the table for the occurrence of a character sequence, from the position of the first selected patch.

**Edit → Sort:**

Opens a dialog box in which you can set the sorting criteria for the patches in the window (each table column functions as a criterion). The one at the top is the primary criterion, and

so on. To change the order, use the mouse to click on the buttons to the right of the list or to drag a criterion to a new position. Click OK to perform the sorting operation.

Note that the sorting order is not maintained automatically: sorting is a ‘one-off command’; so whenever you insert or move patches in the window, these remain as yet unsorted.

Edit → Remove duplicates:

Compares the contents of all patches and removes all duplicates from the window. This is useful for very large libraries or if you have pasted different library files in the same window.

Beware: the comparison only involves the actual patch data, *not* the ‘Memo’ fields, so if two patches only differ by their Memo fields, the second patch gets removed!

Edit → Compare:

The selected patch(es) and the patch(es) on GS-10 Manager’s patch clipboard are compared, on a patch-by-patch and effect-by-effect basis.

If more patches are selected than there are patches on the clipboard, a rotational method is applied: after the patches on the clipboard are through, the first patch on the clipboard is used again, and so on.

The areas that are different in any way are listed in a dialog box. Note that any effects or assigns that are currently switched off are compared too; this includes *all* the 11 FX-1 effects and the 18 FX-2 effects.

Options → Columns:

Opens a dialog box in which you can set which columns are visible, and how specific the contents of certain columns are. Note that you can change the widths of the columns by dragging the vertical lines separating the header columns.

To clarify a few of the specific items:

- If ‘Stereo flow in chain’ is on, a stereo signal at any point in the chain is shown as ‘=’ and a mono signal as ‘-’. If this setting is off, all the effects shown are simply linked by ‘-’.
- ‘Unused effects in chain’ determines whether the ‘Chain’ column includes the effects that are off and cannot be switched on by an Assign.

GS-10 → Receive user patch(es):

Only available in the user patch window. Loads one or more user patches from the GS-10 into the selected user patch(es).

GS-10 → Send user patch(es):

Only available in the user patch window. Sends the selected patch(es) to the GS-10 as user patch(es).

BEWARE: this actually overwrites the GS-10’s user patches, so it is a lot more dangerous than sending a patch to the GS-10 as the temporary patch. Make sure that you do not inadvertently overwrite important patches you haven’t got copies of.

GS-10 → Receive Quick FX and preset patches:

Only available in the preset patch window. Loads the Quick FX and preset patches from the GS-10.

Normally you should never need to perform this, since GS-10 Manager maintains the Quick FX and preset patches automatically, via files shipped with GS-10 Manager. The only circumstance in which you might need this operation would be if your GS-10 has a different set of Quick FX and/or preset patches than those shipped with GS-10 Manager.



GS-10 Manager's Quick FX and preset patches currently stem from a GS-10 version 1.00, with a Software Revision Level of 0.0.0.0. At the moment I'm unaware of any upgrades. You can discover your GS-10's version number by keeping CHANNEL SELECT buttons B and C on the GS-10 pressed while switching on the unit. You can discover your GS-10's Software Revision Level via GS-10 Manager's 'Test connection to GS-10' in the Main window.

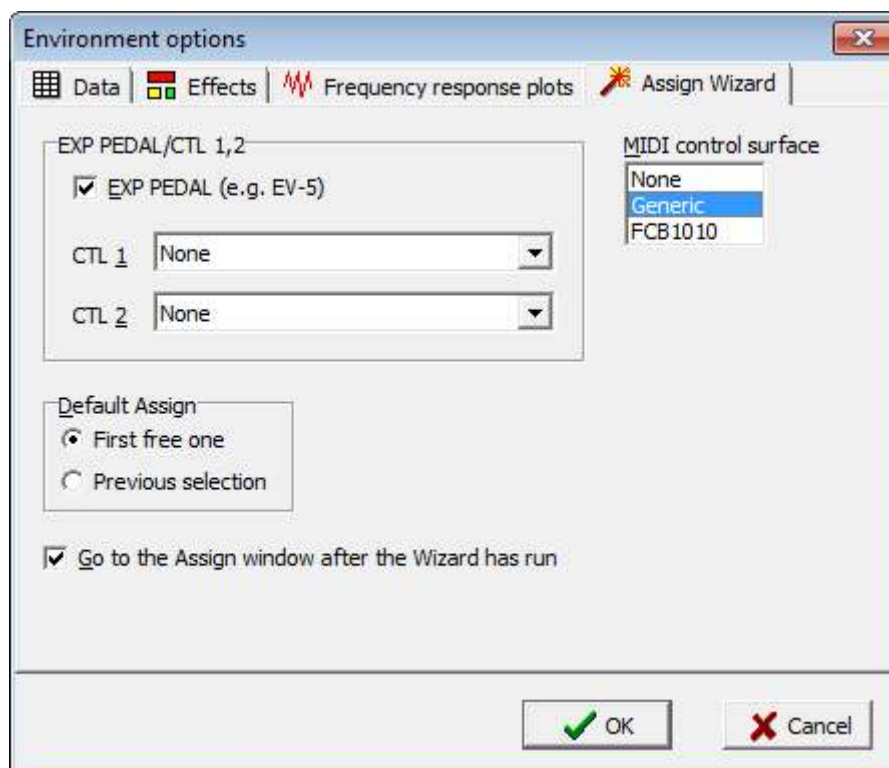
**Mouse usage in the patch table windows:**

- Select a patch by left-clicking.
- Select a range of patches by left-clicking and then moving the mouse before releasing the left button.
- Move any patch or range of patches to any other position (even in a different table!) by right-clicking on the source patch(es), moving to the destination, and releasing the right button. Note: this operation does *not* involve the clipboard, so any patches already on the clipboard remain there.

## 12. The Assign Wizard

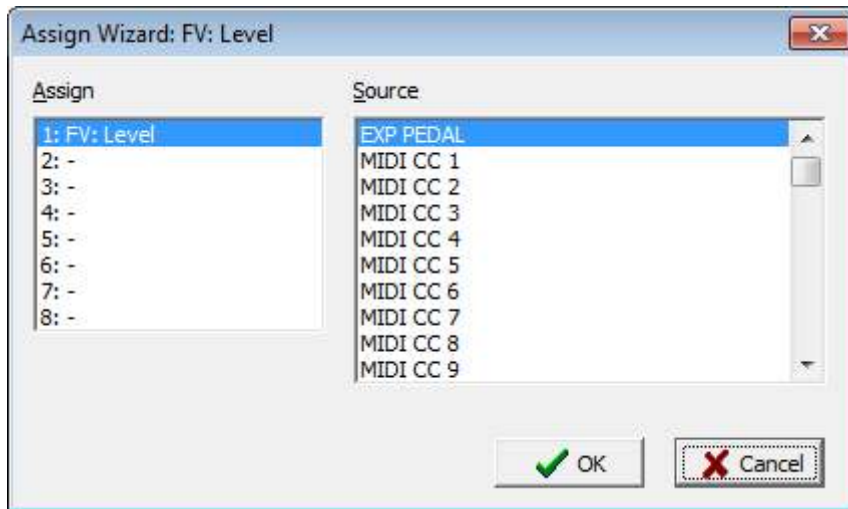
The Assign Wizard allows you to set up Assigns quickly, in a few easy steps:

1. On the Assign Wizard tab of the 'Environment options' dialog box you define which external control sources are connected to your GS-10 via the EXP PEDAL/CTL 1,2 socket and/or via MIDI:



You only have to perform this step once, as long as you don't change your equipment.

2. In the Temporary Patch window or the Effects window, you click on the knob, stompbox etc. belonging to the effect parameter you wish to control remotely. You can also use the Tab key to move to the desired position.
3. You select View → Assign Wizard from the window's menu. (In the Temporary Patch window you can also click on the Assign Wizard button on the toolbar.) This opens the Assign Wizard dialog box:



4. In the Assign Wizard dialog box there are two list boxes:

- a. The Assign number (1-8):  
The Wizard has already preselected an item, partly based on the setting for 'Default Assign' in the Environment options dialog box. However, you can change the Assign number if you wish.
- b. The Source:  
This is a list of the external controllers ('sources') that are available for the effect parameter you have chosen.

Which sources are available depends on the external devices that have been defined in the Environment options dialog box (see point 1 above), and on the type of the effect parameter you have selected: is it an on/off switch or a continuous parameter?

For instance, if a 'momentary switch' is attached to CTL 1, two choices get included: 'normal' and 'toggle'. 'Normal' gives you an Assign by which the effect gets switched off the moment you release the pedal, but in 'toggle' mode the effect gets switched off only when you press the pedal *again*.

On the other hand, in case of a 'latched switch', the pedal *itself* already produces this toggle effect, so you won't be offered a choice between 'normal' and 'toggle'.

If you are using the FCB1010 as a MIDI control surface, there are some additional factors determining the available sources:

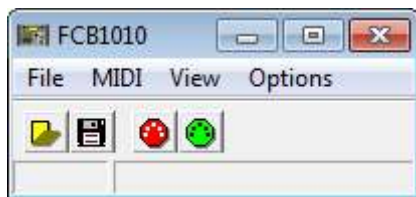
1. If the FCB1010's global Direct Select parameter is *off*, the source list only includes those Control Change numbers that are defined (via CNT 1/2 or EXP A/B) in the 10 presets in the bank currently selected in the FCB1010's bank window.
2. If Direct Select is *on* (which is usually not recommendable, but that's another issue), then the Control Change numbers from *all* 100 presets in the current FCB1010 setup are included.

So your main task in the Assign Wizard dialog box is to select a source. Once you have made your choice and pressed OK, the Wizard sets up the Assign for you. In doing so, the Wizard applies some (hopefully) smart choices, in particular concerning the Target Min, Target Max and Source Mode parameters. For instance, if you have indicated (in the Environment options

dialog box) that the FCB1010's SWITCH 1 is connected to the GS-10's CTL 1 socket, the Wizard automatically reverses the Target Min and Max parameters of the Assign, because the FCB1010 electrical switches use reversed polarity.

If you have checked 'Go to the Assign window after the Wizard has run' in the Environment options dialog box, the Assign window opens automatically after you press OK in the Assign Wizard dialog box: you can then look at the resulting Assign, and tweak its parameters if necessary.

## 13. The FCB1010



The FCB1010 window (opened from the main window) provides an advanced manager for the Behringer FCB1010 MIDI Foot Controller. (Note: only FCB1010 firmware versions 2.4.1B and 2.50.1E are supported. No support for the ‘uno’ firmware versions is available.)

It is beyond the scope of this manual to provide a complete discussion of the FCB1010. For in-depth discussion, please consult the manual for FCB1010 Manager. Here are just a few important remarks:

### Data and descriptions:

The FCB1010’s data can be loaded from or sent to an FCB1010 via MIDI, or opened from or saved to a syx file.

Additionally, it is possible to provide descriptions for each FCB1010 bank and preset: these descriptions are saved to a file with the extension ‘fcb’ in the same folder as the syx file. Saving and opening these fcb files is performed automatically when you save and open the corresponding syx file. (In other words, you’ll only notice the fcb files in an external file manager like Windows Explorer.)

### Global Configuration:

It is important to realize that not all parameters in the Global Configuration area are accepted by the FCB1010 when you send them to the FCB1010: instead, you can only set these parameters manually (or should we say ‘pedally’?) on the FCB1010 in Global Configuration mode. So to avoid confusion, GS-10 Manager by default doesn’t allow you to edit those fields; however, if you wish you can turn editing on; this may be useful for archiving (i.e. file saving) purposes etc.

### The preset list window:

- The order of the columns in the table displaying the 100 presets follows the order in which the FCB1010 sends its MIDI data upon preset selection: i.e. first PC 1, then PC 2, PC 3, PC 4, CNT 1, CNT 2, PC 5, and finally NOTE. Crucially, the FCB1010 sends PC 5 *after* CNT 1 and CNT 2; the purpose of this is to allow sending MSB/LSB bank select messages via CNT 1 and CNT 2 related to PC 5.
- The power of the commands ‘Disable...’, ‘Enable...’, ‘Set (single) ...’ and ‘Set (incremental) ...’ lies in the fact that they apply to the currently selected *range* of presets. So e.g. if you select presets 10-20 and execute ‘Set (incremental) PC 1’ with a value of 5, then preset 10’s PC 1 will become 5, preset 11’s PC 1 will become 6, etc.

Note that ‘Set (single)...’ and ‘Set (incremental)...’ don’t *enable* the selected parameters, so although the values *will* be changed, they may remain invisible.

### The Soft FCB1010:

The ‘Soft FCB1010’ emulates the MIDI output behavior of a real FCB1010. (Obviously there is no output corresponding to the FCB1010’s *electrical* SWITCH 1 and SWITCH 2, apart from the red lights going on and off.)

You can select any MIDI output device for the Soft FCB1010 via ‘MIDI output device for

Soft FCB1010' in the FCB1010 options dialog box. If you select the GS-10 here (normally 'BOSS GS-10 Control'), the GS-10 (and indeed GS-10 Manager) will respond exactly as if the data is coming from a real FCB1010. (In fact, you could even connect a real FCB1010 and the Soft FCB1010 simultaneously!)

### **Should I edit the FCB1010 presets or should I edit the GS-10 Assigns?**

Obviously the settings on the FCB1010 and the settings on the GS-10 should match, but in general it is usually much easier to keep the FCB1010 fixed at some 'general purpose' settings, and perform fine-tuning within the GS-10's Assigns. The main reason for this is that you can only send new settings to the FCB1010 by restarting the FCB1010 in Global Configuration mode, which is of course rather awkward. (Alternatively you could edit the presets directly via the FCB1010's pedals, but this is tricky too.)

### **Example files:**

The GS-10 Manager package includes two example FCB1010 syx files (plus respective fcb files), which illustrate several ways in which you can set up the FCB1010 in connection with the GS-10. These files are installed in the same folder as GS-10 Manager itself:

- These files use CC 11 and 12 for EXP A and EXP B respectively. The idea behind this is to use CC 1-10 for the number pedals, but obviously you should feel free to change these CC numbers to your own liking: by means of the preset list window's 'Set (single) ..' command you can do this in the blink of an eye. (Alternatively you could change the CC numbers in your GS-10 patches; by means of the 'Partial replace' command in the patch list windows this is also quite easy.)
- 'FCB1010 for GS-10 patches.syx' is very simple: it allows you to switch to individual GS-10 patches.
- 'FCB1010 for GS-10 switches.syx' provides a few setups (in the shape of banks) for switching the GS-10's effects on and off within single patches.

The setups in 'FCB1010 for GS-10 switches.syx' highlight several important issues:

### **1-pedal vs. 2-pedal switches:**

The FCB1010 allows you to define what I'll call a '1-pedal' switch: if you put the same CC number in CNT 1 and CNT 2, the FCB1010 sends CNT 1's *value* (e.g. 127 = on) the first time you press the pedal, and CNT 2's value (e.g. 0 = off) the *second* time you press the same pedal; the *third* time, CNT 1's value will be sent again, etc. This may seem nice, but unfortunately the FCB1010 only remembers how many times you've pressed a particular number pedal as long as you haven't pressed any *other* number pedal, which makes having two or more 1-pedal switches in the same GS-10 patch more or less impossible. So you can't really have one FCB1010 pedal controlling Delay On/Off and another Chorus On/Off.

The only solution to this problem is to use '2-pedal' switches: one pedal switches the effect on, another pedal switches the effect off; obviously this does double the number of required pedals per effect switch.

### **Ordinal parameters:**

Most GS-10 patch parameters are either continuous (typically ranging from 0 to 100) or on/off switches. However, a number of GS-10 parameters fall outside these categories: these parameters (often called 'Type') have more than 2 values that cannot be considered continuous in the normal sense.

If you assign these parameters to an expression pedal (e.g. the FCB1010's EXP A/B), you can simply use a standard Assign setup, where Active Range Lo is 0 and Hi is 127 (and of course, to match this, EXP A/B's *own* range would be from 0 to 127 as well). Target Min and Max can be set to the minimum and maximum values of the parameter; for instance, for 'Preamp Type', Target Min can be set to 'JC-120' and Target Max to 'Custom 3'. Thus, the expression pedal's values (from 0 to 127) would be mapped to the full Preamp Type range from 'JC-120' (internally 0) to 'Custom 3' (internally 47). This is unproblematic.

However, if you want to use this Assign setup for control from an FCB1010 *number* pedal, you face a tricky question: which value should CNT 1 (or CNT 2) send? Obviously, a value of 0 triggers 'JC-120', and 127 'Custom 3', but which value should you send if you want to select, say, 'VO Lead'? You'd have to *scale* VO Lead's internal (*ordinal*) value of 11 to the Active Range 0-127; that is, you'd have to multiply 11 by 127, then divide that by 47, and finally round that off in the same way the GS-10 does (which isn't always straightforward). Clearly this is very impractical.

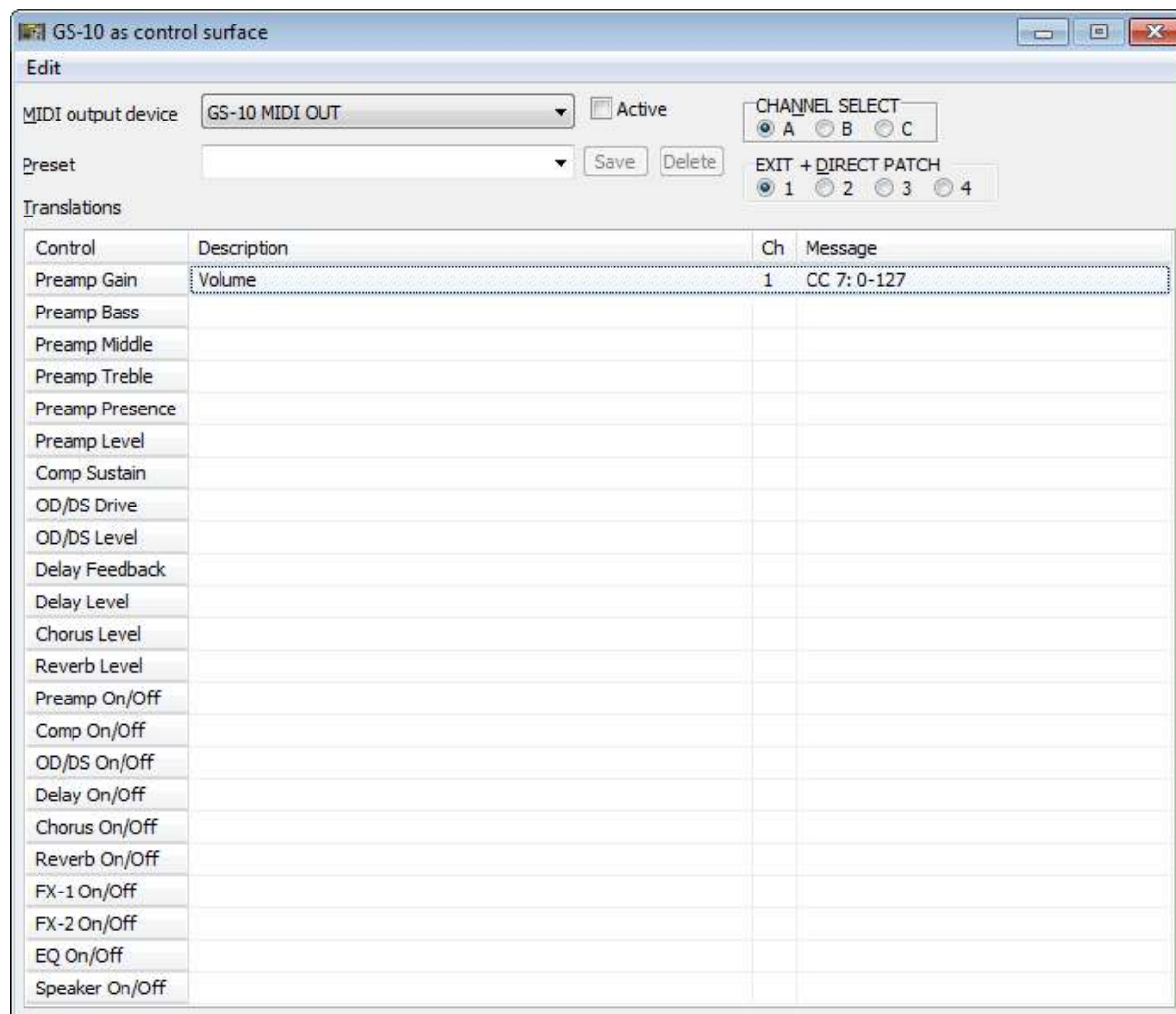
Therefore it is better to avoid scaling in cases like this. You can do this by setting Active Range Hi to the *ordinal* value of the highest parameter value, so 47 (corresponding with 'Custom 3') in the case of Preamp Type. Then CNT 1 or 2 can simply send the ordinal value of your choice *as it is*, for instance VO Lead's value of 11. (Note that the Assign Wizard never sets Active Range Hi to anything else than 127, so you always have to tweak this value manually in these situations.)

'FCB1010 for GS-10 switches.syx' expects this type of 'ordinal' Assign in two cases:

1. Bank 0 should be generally applicable (in fact, this is my personal favorite setup): it sends Preamp Channel Select values A, B and C via pedals 1, 2 and 6. Active Range Hi should be set to 2. Source should be set to MIDI CC 6 (simply to match the (rather arbitrary) CC number used in the pedals' CNT 1).
2. Bank 4 provides an example of a very ad hoc setup: it sends the four MS (Marshall) preamp types (I, II, I+II and HiGain) via pedals 1, 2, 6 and 7. Active Range Hi should be set to 47. Source should be set to MIDI CC 1 (again to match the CC number used in CNT 1).

## 14. Using the GS-10 as a control surface

The ‘GS-10 as control surface’ window (accessed via the Main window: View → Control surface) allows you to control any MIDI device from the GS-10 knobs and buttons:



Thirteen knobs and ten buttons on the GS-10 can be used for this: the knobs for PREAMP/SPEAKER, COMP, OD/DS, DELAY, CHORUS and REVERB, the nine on/off buttons for the various effects, and the SPEAKER ON/OFF button.

GS-10 Manager can translate the input from each of these knobs and buttons to a specific type of MIDI output message: the most common choice is Control Change, but many other types are available too.

A full translation setup consists of no less than *twelve* groups, where each group consists of translations for each of the thirteen knobs and ten buttons; so each translation setup has a total of  $12 \times (13 + 10) = 276$  translations. From the GS-10 itself you can switch among these 12 groups via the three CHANNEL SELECT buttons and the four EXIT + DIRECT PATCH (1-4) button combinations (i.e. you hold down EXIT, then press a DIRECT PATCH button). (The GS-10 itself uses the EXIT + DIRECT PATCH button combinations to send Start/Stop messages to remote MIDI devices — see the section called ‘Controlling Recorders and Sequencers Remotely from the GS-10’ in the GS-10’s Owner’s Manual.) **For GS-10 Manager to recognize the EXIT + DIRECT PATCH combinations,**



***the GS-10's System → MIDI → Remote Control parameter must be set to 'MMC'.***

You can save a translation setup as a so-called preset by providing a new name in the Preset box and pressing the Save button. This creates a file of the same name (with extension 'gsc') in the same folder as GS-10 Manager itself. You can switch among your saved presets as you like. (All existing presets are automatically loaded when GS-10 Manager starts up.)

For GS-10 Manager to actually *apply* the selected preset when you manipulate the GS-10's knobs and buttons, you must check the 'Active' checkbox. (If this checkbox is grayed, this means that there is currently no bidirectional connection to the GS-10 itself (see the GS-10 options dialog box), or no MIDI output device has been defined.)

Please note the following points concerning control surface mode:

- **BEWARE:** Even in control surface mode, the GS-10 is still a sound-processing device! This implies a potential danger for control surface mode, where the idea is to use knobs and buttons like PREAMP GAIN, PREAMP LEVEL and SPEAKER ON/OFF as 'dumb' MIDI data generators: if you turn such a knob or button up or on and then accidentally produce sound at the active GS-10 audio input (e.g. via a guitar), you might blow up either the GS-10's own speakers or any connected speakers.  
So in order to avoid problems it would be best to disconnect all equipment from the GS-10's audio inputs. However, GS-10 Manager also does its best to contribute to safety in this respect: when you activate control surface mode, GS-10 Manager sends a temporary patch called 'CONTROL SURFACE!' to the GS-10 (the name should appear on the GS-10's display). Basically, this patch sets the GS-10's input to 'USB (Gtr/Mic)', switches off all effects and sets Foot Volume and Master Level to 0, so unless you change these values manually, you should be pretty safe. However, please do be careful, and note that I don't accept any responsibility for any damage incurred using control surface mode.
- Obviously, for control surface mode to work, the GS-10's global parameter 'Knob control out' (see under System → MIDI) must be On, otherwise the GS-10 won't send any data when you turn a knob or press a button!
- GS-10 Manager maintains individual values *per translation group* for each of the effect on/off buttons, and it sends the appropriate values to the GS-10 whenever you switch to another group (e.g. from CHANNEL SELECT A to B): thus, the effect lights on the GS-10 may go on or off accordingly. (This synchronization prevents you having to press the GS-10's effect on/off buttons even more than you already have to due to their annoying 'blinking mode' behavior!)  
However, the values for the GS-10's *knobs* are *not* maintained. There would be little point, since these knobs aren't motorized and (due to scaling) the parameter values shown in the GS-10's display usually don't match the sent MIDI Control Change values anyway.
- GS-10 Manager does *not* provide parameter feedback from the controlled MIDI device to the GS-10. (Such a facility would be very tricky to implement: it would also depend on the capabilities of the controlled MIDI device. And whereas feedback to the GS-10's *buttons* might be useful, feedback to the *knobs* would be pointless for the same reasons mentioned in the previous point.)
- In control surface mode, it is highly advisable to have the GS-10's global Knob Mode parameter at 'Immediate'. Since there is no parameter feedback to the GS-10's knobs (see the previous two points), setting Knob Mode to 'Current setting' would be totally pointless.

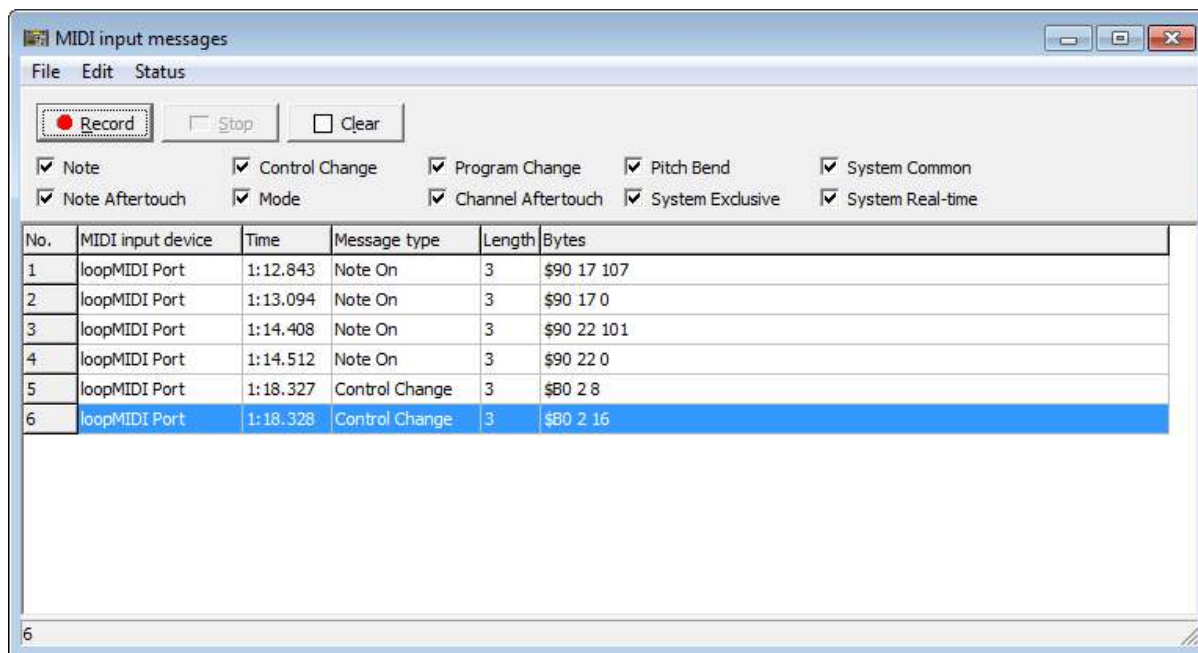
- While control surface mode is on, it's probably best *not* to change the patch number (either via the PITCH/VALUE knob on the GS-10 itself or from GS-10 Manager), both for reasons of safety and for proper synchronization between the GS-10 and GS-10 Manager concerning the different translation groups.
- You can also use the GS-10 *itself* (i.e. normally 'BOSS GS-10 Control') as the MIDI output device that is being controlled!
 

You might want to do this to use a knob of an effect that is *off* to control a parameter of an effect that is *on*. For instance, in a patch with Phaser on but Chorus off, you could use the CHORUS LEVEL button to control, say, Phaser Depth!

Note: if the GS-10 itself is the MIDI output device being controlled, GS-10 Manager does *not* send the 'CONTROL SURFACE!' patch to the GS-10 when control surface mode becomes active. This allows you to proceed normally with your current patch.
- The GS-10's knob output ranges don't span the full MIDI range of 0-127: most knobs only output 0-100, some 0-120. GS-10 Manager deals with this problem by scaling these ranges up to 0-127, but obviously this leads to a few 'skips' (you might get 1, 2, 3, 4, 6, etc.). This is fine for most Control Change applications, but could be problematic for something like Program Change.
- Finally an almost moral point: the GS-10's knobs aren't the sturdiest in the world, and to avoid wear and tear (particularly since the GS-10 is no longer being sold!) it might be better to use them only if you absolutely have to, so I wouldn't actually *recommend* using them in control surface mode. But at least it's nice to have the option...

## 15. The MIDI input messages window

The MIDI input messages window is accessible from the main window in two ways: its toolbutton (third from left) and the View pull-down menu (→ MIDI → Input messages):



The MIDI input messages window allows you to record and view MIDI messages sent to GS-10 Manager from any of the currently *enabled* MIDI input devices, as defined in the MIDI devices dialog box (opened via the main window's Options pull-down menu). Thus, this window is very useful for advanced troubleshooting of a GS-10's output messages. You can also copy recorded messages to the 'MIDI message clipboard' for inclusion in 'Custom' ⇒ 'Bytes' definitions of GS-10 elements, and you can save recorded messages to files (in various formats).

All recorded MIDI messages are displayed in the table at the bottom of the window, one per row. The following columns exist:

- **No.:**  
The sequential number (index) of the message in the table.  
This number is for reference only. It has no further meaning: when you remove a message, the numbers of all subsequent messages simply decrease by one.
- **MIDI input device:**  
The MIDI input device from which the message was received.
- **Time:**  
The time at which the message was received, counted from the moment GS-10 Manager was started. You can set this column's format in the Edit → Options dialog box (see below).
- **Message type:**  
The type of the message: Control Change, System Exclusive, etc.

- Length:  
The number of bytes in the message.
- Bytes:  
The bytes of the message. The formatting (hexadecimal, decimal etc.) can be set via the options dialog box, accessed via the Edit pull-down menu.

The menu provides the following operations:

File → Save MIDI file:

Saves the selected (highlighted) MIDI messages to a standard MIDI file ('SMF'). You can load this file in a sequencer program etc.

Two versions of this operation are available via a submenu:

1. 'Times relative to first-saved message':  
The original recording times are maintained, but for convenience a displacement is applied: all messages are saved with their times 'normalized' to the *first* message saved; so the first message saved itself always appears at time 0.
2. 'All times zero':  
All messages are saved with their times set to zero.

Technical notes:

- The MIDI file is in 'format 0', i.e. a single track.
- For convenience, the name of the program ('GS-10 Manager') plus its version number is included as the track name. (It completely depends on the receiving program whether you can see this in any way.)
- The file includes a tempo specification of 120 BPM.  
Beware: It seems that when you import a MIDI file into an *existing* Sonar 7 project, Sonar ignores this file tempo of 120 BPM and wrongly interprets the message times according to the existing project's tempo. In the case of a file saved via 'Times relative to first-saved message', this may lead to unwanted stretching, so it's best to only import such a file into a Sonar project having a tempo of 120 BPM. (I haven't tested later Sonar versions yet.)
- MIDI 'running status' is automatically applied, i.e. where possible the status bytes of channel messages are removed.

File → Save binary file:

Saves the bytes of the selected (highlighted) MIDI messages to a binary file. Note that the recording times are *not* saved: you should save to a standard MIDI file for that (see 'Save MIDI file' above).

You can select 'bin', 'syx' or any other extension for the output file, but your choice does not affect the *content* of the output file in any way.

Beware: a *syx* output file is only valid (i.e. usable in a standard way by other programs) if it *only* contains *System Exclusive* MIDI messages. And since GS-10 Manager specifically allows you to create a *syx* file containing only the recorded System Exclusive

messages (see ‘Save System Exclusive messages’ below), the ‘save binary file’ operation is primarily intended to facilitate further processing by some specialistic computer program expecting a ‘flat’ sequence of MIDI messages. (Typically this is a program you write yourself!) Note that you can also save MIDI message bytes to a *text* file (see below), which may or may not be easier for further processing.

**File → Save text:**

Saves the selected (highlighted) MIDI messages to a text file: the bytes of each message are output on a separate line. The bytes are written in the formats defined in the options dialog box (cf. Edit → Options), so exactly as they are currently being displayed in the Bytes column of the window’s table.

You could process the output file in an external text editor, then convert them to a binary file: see ‘Convert text file(s) to binary file(s)’ below.

**File → Save System Exclusive messages:**

Saves any selected (highlighted) MIDI *System Exclusive* messages to a syx file.

**File → Convert text file(s) to binary file(s):**

Converts a text file containing lines of hexadecimal bytes (*without* ‘\$’ prefixes) to a binary file. You can select ‘bin’, ‘syx’ or any other extension for the output file, but your choice does not affect the *content* of the output file in any way.

This is a somewhat obscure utility that could be applied to a text file created by a ‘Save text’ operation (see above), possibly edited afterwards via a normal text editor (such as Notepad). Specifically, you can thus convert a text file containing only MIDI System Exclusive messages to a legal syx file.

**Edit → Copy to MIDI message clipboard:**

Copies the selected (highlighted) MIDI messages to the MIDI messages clipboard. Note that MIDI ‘running status’ is automatically applied, i.e. where possible the status bytes of channel messages are removed.

**Edit → Delete:**

Removes the selected (highlighted) recorded MIDI messages.

**Edit → Clear:**

Removes all recorded MIDI messages.

**Edit → Select all:**

Selects all recorded MIDI messages.

**Edit → Options:**

Opens a dialog box in which you can set various options related to the MIDI input messages window:

- **Buffer size:**  
Sets the number of MIDI messages that can be recorded. The default is 65536; this is also the maximum. Note that lowering this setting removes any existing recorded messages beyond the new buffer size.
- **Buffer overflow protocol:**  
Determines what happens if the buffer is full (as determined by the ‘buffer size’

setting) when a MIDI message comes in:

- **Clear:**  
The whole table is cleared, and the incoming message is entered at number 1. This is the default setting.
- **Shift:**  
The existing message at number 1 is removed from the table, all other messages shift back one position, and the incoming message is added at the bottom.  
Beware: this setting can be very time-consuming.
- **Freeze:**  
The incoming message is ignored. However, the recording process itself isn't stopped automatically, so when you manually remove one or more recorded messages (e.g. via the Clear button), new messages will be recorded again.
- **Stop:**  
Recording stops automatically.
- **Scroll to new message:**  
Determines whether the message table automatically scrolls to any incoming MIDI message.  
‘On’ is the default, but may result in ‘frantic’ scrolling when MIDI input is heavy, which may also starve other parts of the program. For instance, the MIDI input and output meter windows may become unable to update their gauges at the required frequency, so that not all incoming messages are displayed. So if you want a quieter display, switch scrolling off.  
Note that the number of recorded MIDI messages is always shown on the status bar at the bottom of the window: this allows you to establish that messages are being recorded even when you have disabled scrolling.
- **Time format:**  
Determines the time format used in the Time column. Five formats are available: ms, sec.ms, min:sec.ms, hrs:min:sec.ms and days:hrs:min:sec.ms. So e.g. in the sec.msec format you could get ‘61.000’, which would be ‘1:01.000’ in the min:sec.msec format.
- **Byte formats:**  
Determines the ways in which MIDI message bytes are formatted: this affects both the window’s Bytes column and the ‘Save text’ operation.  
Separate settings are available for ‘status’ and ‘data’ bytes in both System Exclusive and non-System Exclusive messages. A byte in a MIDI message is a status byte if it is in the range of \$80-\$FF (128-255), and a data byte if it is in the range of \$00-\$7F (0-127).

Status → Record:  
Starts the recording process.

Status → Stop:  
Stops the recording process.

The panel below the menu contains the following items:

Record/Stop/Clear buttons:

These buttons duplicate the corresponding menu items.

Note/Note aftertouch/etc.:

These checkboxes determine which incoming MIDI messages are recorded. Checked means 'yes'.

## 16. Using the computer keyboard and mouse

GS-10 Manager's user interface uses mostly standard widgets (buttons, checkboxes, pull-down boxes etc.). This means that it may sometimes be easier to use the keyboard instead of the mouse for particular operations.

Of particular interest are the keystrokes and mouse-clicks that you can apply to parameter knobs. The following actions are defined:

Key(s)/mouse click	Action
Alt+Enter <i>or</i> Alt+Left click (actual knob)	Open a dialog box in which you can type a new value (this only works for purely numerical knobs, i.e. knobs without items like 'Off')
Left arrow	Decrease the value by 1
Right arrow	Increase the value by 1
Ctrl+Left arrow	Decrease the value by a 'big' amount (often 10)
Ctrl+Right arrow	Increase the value by a 'big' amount (often 10)
Home	Select the lowest value
End	Select the highest value
Left click (caption/value)	Select the knob under the mouse
Left click (actual knob)	Set the value as indicated by the mouse position
Right click	Change the value by a 'big' amount (often 10) toward the mouse

And here are a few standard Windows keystrokes worth mentioning:

Control	Key(s)	Action
<i>Any</i>	Tab	Select the next control
	Shift+Tab	Select the previous control
Checkbox	Space	Toggle the setting on/off
Pull-down box	Left/Up arrow	Select the previous item
	Right/Down arrow	Select the next item
	Home	Select the first item
	End	Select the last item
	Alt+Up/Down arrow	Open/close the pull-down list



## 17. Known problems

### MIDI Thru:

GS-10 Manager's MIDI Thru feature only passes on *short* MIDI messages, i.e. any message *except* SysEx (System Exclusive).

This is because GS-10 Manager achieves its MIDI Thru feature by simply calling the `midiConnect` function in Windows' `MMSYSTEM` library: basically Windows handles all Thru traffic behind GS-10 Manager's back, but unfortunately `midiConnect` doesn't pass on SysEx messages.

I may try to find a work-around for this in a future version of GS-10 Manager. In the meantime you should use MIDI-OX if you need to pass on SysEx messages via a MIDI Thru connection. (Apparently MIDI-OX doesn't use `midiConnect`, but handles all MIDI Thru traffic manually, which might actually be marginally slower than `midiConnect`, for non-SysEx messages that is...)

### MIDI input:

If an incoming SysEx message is followed immediately by a channel message, the channel message may be processed first. This may be fixed in a future version of the application.

### MIDI transmission:

MIDI transmissions of GS-10 data lock up GS-10 Manager: the application is unresponsive during transmission. Hopefully this will be fixed in a future version.

### USB MIDI ports:

You should not connect or disconnect a MIDI-to-USB device via its USB cable while GS-10 Manager is running, since this may lead to nasty error messages; instead, you must exit and restart GS-10 Manager manually. I've been working on a fix, but I don't know if and when this will be made available.

### Window widths:

If the screen dimensions are too small, big windows of *fixed* size can get cut off. Normally you're safe with a screen of  $1024 \times 768$  pixels, but you can run into problems when you decrease the screen size of a virtual machine running GS-10 Manager.

### Patch window tables:

The patch window tables sometimes react in slightly annoying ways. For instance, during selection of a range of patches, moving the mouse below the table bottom always causes the grid to suddenly shift to the left, i.e. the rightmost column becomes visible. (This behavior is inherited from the 'low-level' grid programming library that GS-10 Manager uses, so I don't know an easy way to circumvent this.)

### Import GT-3/GT-6 patches:

Some of the GT-3/6 syx patch files available on the web contain data format errors, ranging from checksum errors to invalid effect chains. Most of these errors are trapped by GS-10 Manager, and the patches concerned are simply skipped. However, GS-10 Manager currently does not perform a *systematic* range check on *all* the incoming GT-3/6 patch parameters, so in a few cases you may end up with an invalid GS-10 patch. (In a worst case scenario, GS-10 Manager itself might start behaving in 'funny' ways, but this is quite unlikely; exiting and restarting GS-10 Manager should usually 'solve' such a problem.)

Opening files from a file manager:

Since GS-10 Manager registers itself as the default application associated with the gse, gsl, gss, gst and gsx file types, it is possible to open any such file directly from a file manager (like Windows Explorer) by clicking on its file name. However, this currently always starts a new copy of GS-10 Manager, whereas one would probably want the copy of GS-10 Manager that is *already* running to handle this opening request. For the moment, remember to only open any of these files from Windows Explorer if GS-10 Manager is *not* already running.

## 18. Wish list

- An 'Assign Checker' that spots 'orphaned' Assigns etc.
- Live display of the frequency responses from the tone controls in TM, ACS, OD, DD, CE and RV.
- Allow the user to sort OD and preamp types etc. by their order in the GS-10 instead of alphabetically.