

BCN44 MANAGER



Version 1.5.1

MANUAL

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MOUNTAIN UTILITIES



<https://mountainutilities.eu/>

CONTENTS

1. Overview	3
2. Version history	4
3. Computer requirements	7
4. Installation of BCN44 Manager	8
5. MIDI setup	9
6. The main window	14
7. The BCN44s window	22
8. The Presets window	24
9. The MIDI input messages window	26
10. The MIDI keyboard	31
11. The MIDI controllers window	32
12. The MIDI System Exclusive messages window	34
13. Using the computer keyboard and mouse	36
14. Known problems	37

1. Overview

BCN44 Manager is a utility by Mountain Utilities for working with the Behringer BCN44 ('Nano B-Control') MIDI Controller.

BCN44 Manager provides maintenance of up to sixteen BCN44s simultaneously:

- Sending and receiving presets.
- Display of all preset and element settings in on-screen tables.
- Graphical editing of all preset and element settings, including initialization and copy-and-paste.

Additionally, BCN44 Manager provides many generic MIDI input/output tools that may come in handy when you're working with a BCN44, such as a MIDI message recorder, a SysEx editor and a mouse-controlled MIDI keyboard with chord and arpeggio facilities. However, note that BCN44 Manager does not include the *full* set of tools present in both the 'MIDI Tools' and 'BC Manager' applications by Mountain Utilities.

BCN44 Manager is only available for Windows. (A future Linux edition is unlikely, but not impossible. There are no plans for a macOS edition.)

BCN44 Manager is free, although donations are very welcome.

2. Version history

Version 1.5.1 (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 1.5.0 (2020-09-14)

- New: this manual.
- 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 and the skin definitions.
- 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.

Version 1.4.0 Alpha 1 (2018-06-14)

- The installer automatically installs the edition of BCN44 Manager matching 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.)
- The BCN44 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.

Version 1.3.0 (2016-03-25)

- 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 no longer creates a link to Behringer’s BCN44 web page in the Windows start menu, since this web page no longer exists.
- The new Restart operation terminates BCN44 Manager and automatically starts a new instance of it. There is also a version of Restart that restarts BCN44 Manager with its default setup.
- You can switch between different setups for the program (including MIDI I/O device states). (This requires restarting the program.)
- You can switch between different window layouts (‘desktops’). (This does not require restarting

the program.)

Note that there are two types of ‘desktops’: one type (with file extension ‘.dsk’) concerns all general windows (i.e. all not belonging to individual BCN44s), another type (with extension ‘.44d’) concerns only the windows belonging to a particular BCN44. This offers a lot of flexibility.

- 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.
- In the MIDI keyboard window, Middle C has a blue border.
- The MIDI keyboard updates its display immediately when you mouse-drag the ‘thumb’ in its horizontal scrollbar. (Previously the keyboard updated only when you released the mouse button.)
- In the MIDI controllers window, the control bars respond to incoming Control Change messages.
- Many new facilities in the MIDI System Exclusive window, such as individual byte editing, the new ‘probe’ panel and Roland checksum correction.
- A BCN44-related grid updates its display immediately when you mouse-drag the ‘thumb’ in its horizontal or vertical scrollbar. (Previously these grids updated only when you released the mouse button.)
- 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.
- BCN44 Manager no longer refuses to start if system.ini doesn’t exist in the Windows system folder.

Version 1.2.2 (2014-02-05)

- A window in which you can perform MIDI data byte conversions.
- The Help pull-down menu of the main window provides access to a window listing the computer keyboard and mouse actions that can be applied to parameter knobs.
- BCN44 Manager uses the new Mountain Utilities web site at mountainutilities.eu in links and its update mechanism.

Version 1.2.1 (2013-01-18)

- New: the Program changer window, from which you can send MIDI Program Change messages, optionally prefixed by Bank Select MSB/LSB messages. Useful for testing.
- New features in the Controllers window and the Keyboard window.
- Several improvements to the user interface.

Version 1.2.0 (2011-01-10)

This version supports Unicode. (This mainly concerns file names.)

Version 1.1.3 (2010-03-05)

Version 1.1.2 (2009-11-02)

Version 1.1.1 (2009-08-06)

Version 1.1.0 (2009-04-30)

Version 1.0.0 (2009-03-14)

First published version.

3. Computer requirements

To run BCN44 Manager, your computer must comply with the following requirements:

- Processor: Any Intel 80486- or Pentium-compatible CPU. Processor speed is relatively unimportant. The number of cores is irrelevant, since BCN44 Manager only uses one core.
- Operating system: Windows 2000 or later (XP, Vista, 7, 8, 10 etc.).
- An SVGA-compatible graphical card and monitor:
 - The screen size should be at least 800×600 pixels. (However, some of the bigger windows and dialog boxes may be cut off if the screen is too narrow, so 1024×768 is the *practical* minimum.)
 - For best results, the color depth should be at least 16 bits. (At a depth of only 256 colors, some colors aren't rendered as intended.)
- A mouse.
- Free hard disk space: about 11 MiB.
- RAM: when running, BCN44 Manager normally occupies roughly 11 MiB.
- BCN44 Manager runs perfectly without a MIDI link to an actual BCN44, but if you want to establish a real-time connection between BCN44 Manager and a BCN44, the BCN44 must be linked to the computer via MIDI input and output ports, nowadays usually on a MIDI-to-USB device.

4. Installation of BCN44 Manager

Three editions of BCN44 Manager are available: an installer, a 32-bit portable edition and a 64-bit portable edition:

Installer:

1. Download [bcnman-a.b.c-install.exe](#) (where *a.b.c* stands for the actual version number) to your computer from the BCN44 page at the Mountain Utilities web site (<https://mountainutilities.eu/bcn44>).
2. Run [bcnman-a.b.c-install.exe](#) and follow its instructions. The installer automatically installs the edition of the actual application ([BCNMan.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 → BCN44 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 BCN44 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 [bcnman-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 BCN44 page at the Mountain Utilities web site (<https://mountainutilities.eu/bcn44>). The ‘x64’ (64-bit) edition only runs on 64-bit Windows, the ‘x86’ (32-bit) edition on 32- and 64-bit Windows.
2. Unzip [bcnman-a.b.c-xnn-portable.zip](#) completely (maintaining the zip file’s tree structure) to any folder to which BCN44 Manager itself ([BCNMan.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 BCN44 Manager would *not* have write-access.

Running BCN44 Manager itself

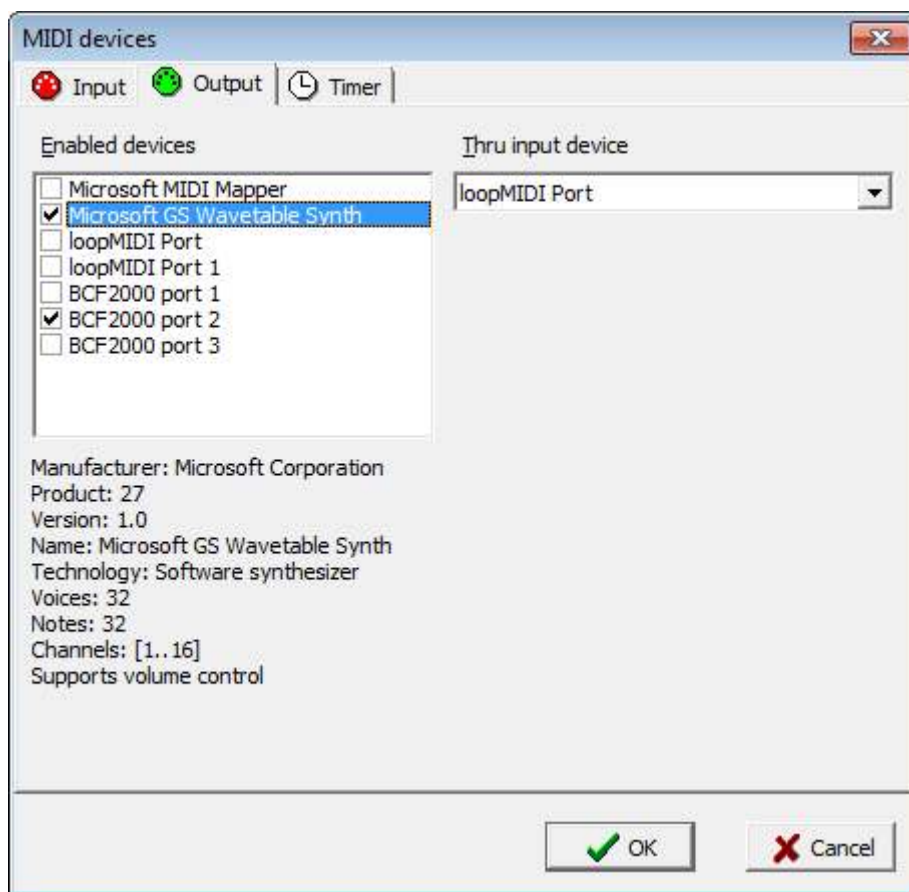
After installation, you can start BCN44 Manager ([BCNMan.exe](#)) itself, e.g. via the Windows start menu.

If you have never run BCN44 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 ([BCNMan.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 BCN44 Manager manually where to find a particular BCN44. This involves the following steps:

1. You must ensure that the pertinent MIDI I/O ports are *enabled* in BCN44 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 BCN44 Manager connects:

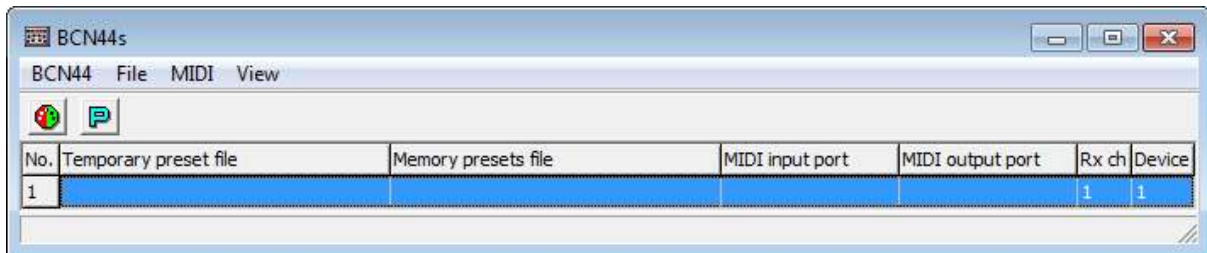


Enabling the proper I/O devices is relevant in several ways:

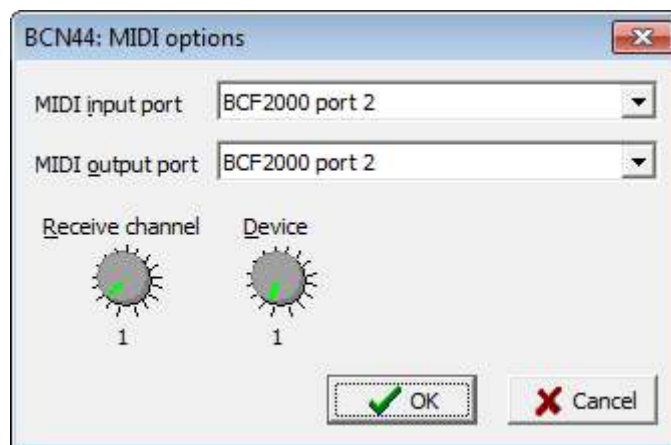
- If you want BCN44 Manager to communicate with a BCN44, the MIDI input and output ports connected to this BCN44 need to be 'enabled' here.
- More in general, *all* BCN44 Manager's MIDI utilities (including those not directly related to BCN44s) can only exchange data via MIDI devices that are 'enabled'.
- 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 BCN44 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.

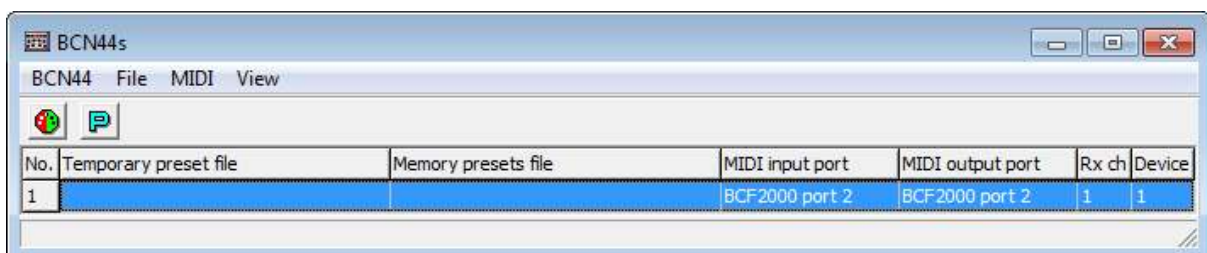
2. You must set the BCN44's MIDI I/O ports and its Device ID to the correct values:
 - a. In the list of BCN44s in the BCN44s window, select (highlight) the appropriate BCN44. (If necessary, you can add one via BCN44 → New.) Obviously, if only one BCN44 is defined, it's automatically selected:



- b. Open the 'MIDI options' dialog box via the MIDI pull-down menu, and select the MIDI I/O ports to which the BCN44 is connected, the BCN44's Receive Channel and its Device ID:



After this, the BCN44s window should look like this:



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. BCN44 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 BCN44 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 BCN44 Manager's MIDI devices dialog box, then any MIDI data sent to 'Out To MIDI Yoke: 1' not only comes back to BCN44 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 BCN44 Manager this is mainly relevant during program exit. In principle BCN44 Manager terminates almost instantly upon exit, but when all the input ports of MIDI Yoke NT 1.75 are enabled, termination of BCN44 Manager takes some 16 seconds longer than normal! Therefore you should disable as many MIDI Yoke NT input ports as possible in BCN44 Manager's MIDI devices dialog box, i.e. any MIDI Yoke NT input ports that BCN44 Manager itself doesn't use. (Note that you can still use any MIDI ports disabled in BCN44 Manager in *other* programs!)

To help you avoid some of the serious problems discussed above, BCN44 Manager takes the following steps:

- On *first* startup, if BCN44 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 BCN44 Manager's exit procedure), unless some

other program (e.g. MIDI-OX) is routing a BCN44 through a MIDI pipe.

- On *every* startup, BCN44 Manager optionally warns you if any MIDI Yoke NT input ports are enabled and thereby cause extra delays during termination of BCN44 Manager. You can enable/disable this warning on the Input tab of the MIDI devices dialog box.

6. The main window

BCN44 Manager's main window only consists of a pull-down menu and a toolbar:



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

The menu provides the following operations:

File → Restart:

Terminates BCN44 Manager and starts a new instance of it. Beware: the application does not prompt you to save/send any changed data: all non-saved/sent data are lost upon restart.

File → Restart with default setup:

Functions like Restart (see above), with two differences:

- Since this operation is somewhat 'momentous', a dialog box requires you to confirm that you indeed want to do this.
- The default setup file BCNMan.stp is deleted before the restart, so that all BCN44 Manager's setup values (such as MIDI I/O device settings and window positions/sizes) are restored to their defaults. Consequently, BCN44 Manager's new instance behaves as if you have never run the application before.

This operation may be useful when some setup problem has developed that you find yourself unable to fix quickly otherwise. However, the restoration of the default setup also has its drawbacks: for instance, you must set up BCN44 Manager's data contexts for all your BCN44s from scratch; this concerns for instance MIDI I/O port assignments and preset file associations. Note, though, that the deletion of BCNMan.stp does *not* affect your BCN44s *themselves*, nor the *contents* of any associated preset files: it's just that the BCN44s must be *linked* again to the proper MIDI I/O ports and files.

Note: 'Restart with default setup' does not destroy the file lists in the application's menus (such as the Setup submenu — see below): these file lists are not stored in BCNMan.stp but in BCNMan.mru. If you want to clear these file lists, simply use their 'Clear list' operations, or (for a total clearance) remove BCNMan.mru while the application isn't running.

File → Setup:

A submenu from which you can open and save setup ('.stp') files.

A setup file includes nearly all the application's customizable settings, including MIDI I/O device settings and window positions/sizes.

By opening a (previously saved) setup file you can quickly switch from one setup to another. However, opening a setup file involves restarting the application; thus you will lose transient data like unsaved recorded MIDI input messages. So if you only wish to change the window positions/sizes, it's simpler to use the desktop ('.dsk') file facility (see View → Desktop), because this doesn't involve restarting the application.

Tip: you can force BCN44 Manager to use a specific setup file via the command line, as follows:

/s setupfile

File → Exit:

Terminates BCN44 Manager. Beware: the application does not prompt you to save/send any changed data: all non-saved/sent data are lost upon restart.

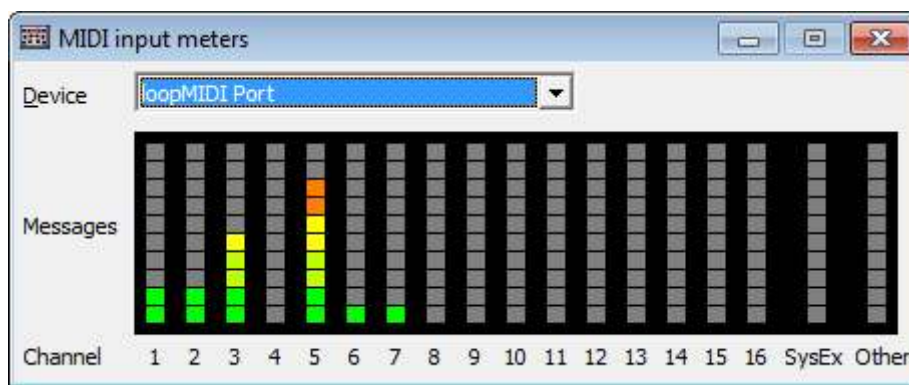
Note that the associated hotkey (Alt+X) works from almost *any* location in the program, not just from the main window. Of course you can also terminate BCN44 Manager by clicking on the X icon on the main window's title bar. Pressing Alt+F4 also works, but (unlike Alt+X) only from the main window.

View → BCN44s:

Opens the 'BCN44s' window. This is the gateway to the main functionality of BCN44 Manager. See §7 for more information.

View → Input meters:

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



This window can be useful for troubleshooting your MIDI connections.

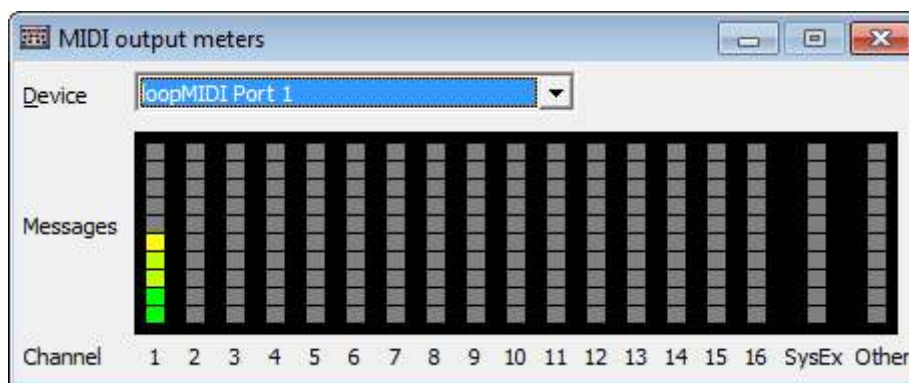
'DISABLED' in front of the selected MIDI input device indicates that the device is disabled, so no MIDI messages can currently be received from that device. (You can enable devices in the MIDI devices dialog box.)

View → Input messages:

Opens the MIDI input messages window. Here you can record and view messages from the MIDI input devices. See §9 for more information.

View → Output meters:

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



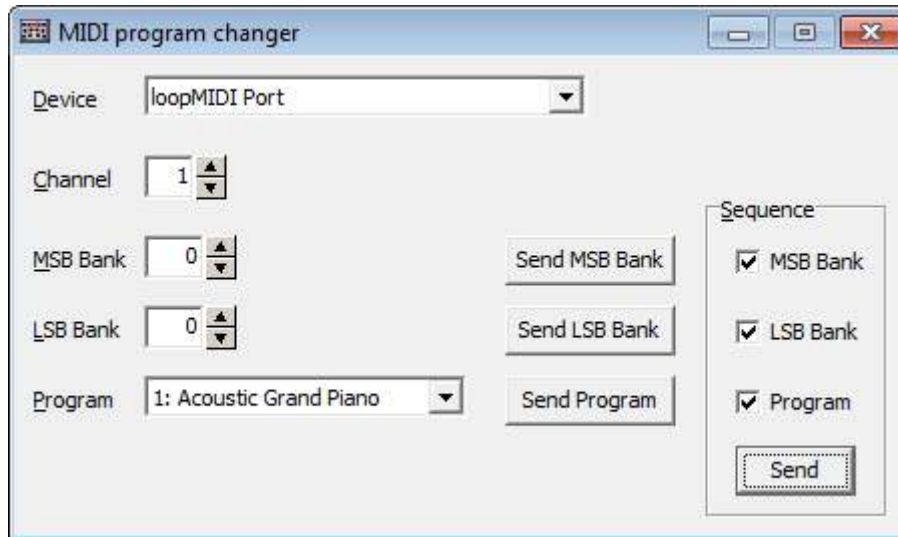
This window can be useful for troubleshooting your MIDI connections. 'DISABLED' in front of the selected MIDI output device indicates that the device is disabled, so no MIDI messages can currently be sent to that device. (You can enable devices in the MIDI devices dialog box.)

View → Keyboard:

Opens a window containing a virtual MIDI keyboard. See §10 for more information.

View → Program changer:

Opens a window from which you can send MIDI Program Change messages prefixed by Bank Select MSB/LSB messages, in any combination:



This window is very useful for testing devices that seem unwilling to change programs.

View → Controllers:

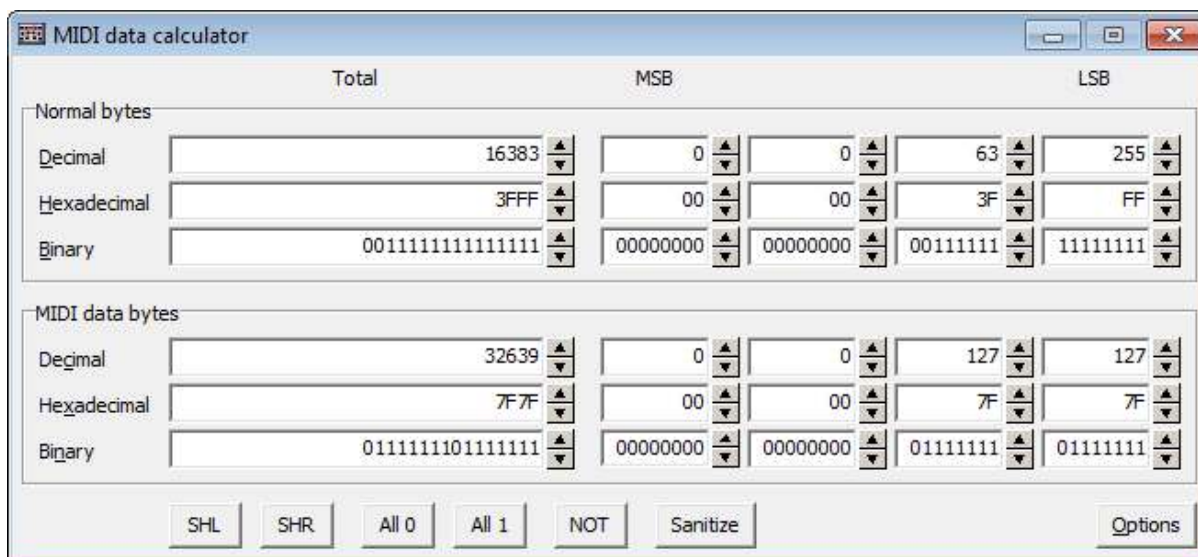
Opens a window in which you can receive and send MIDI Control Change messages. See §11 for more information.

View → System Exclusive messages:

Opens a window in which you can perform many actions related to MIDI System Exclusive (SysEx) messages. See §12 for more information.

View → Data calculator:

Opens a window in which you can convert a 4-byte sequence of 'normal' bytes to its MIDI data counterpart or vice versa. (The MIDI protocol demands that the highest bit ('bit 7') of each MIDI data byte is zero; consequently, if a sequence of two or more MIDI data bytes constitute one number, all bit 7s are 'scrapped' and all more significant bits are shifted to the right.)



Both the normal bytes and the MIDI data bytes are displayed in decimal, hexadecimal and binary form simultaneously. You can also perform simple operations like SHL and SHR. The Sanitize button clears bit 7 of all four MIDI data bytes. Via the Options button you can customize the window's display.

View → Desktop:

A submenu from which you can open and save desktop ('.dsk') files.

A desktop file contains the positions, sizes and states (hidden/visible/minimized) of all the *generic* windows in the application. (Thus, a desktop file contains a subset of the data in a setup file: see File → Setup.) However, a desktop file does *not* contain the settings of the windows belonging to the individual BCN44s (such as preset and element list windows): instead, these can be maintained via 'BCN44 desktop' ('.44d') files; see View → Desktop in the BCN44s window.

By opening a (previously saved) desktop file you can quickly switch from one layout (at least for the generic windows) to another. Unlike opening a setup file, this does not involve restarting the application.

By default the 'Keep numbers' option is off, so that opening or saving a file promotes the file name to position 1 in the list; when 'Keep numbers' is on, the list stays as it is, which can be useful when you're continually switching between particular desktops.

View → Stay on top:

When this menu item is checked, BCN44 Manager's main window stays on top of any other windows belonging to BCN44 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:

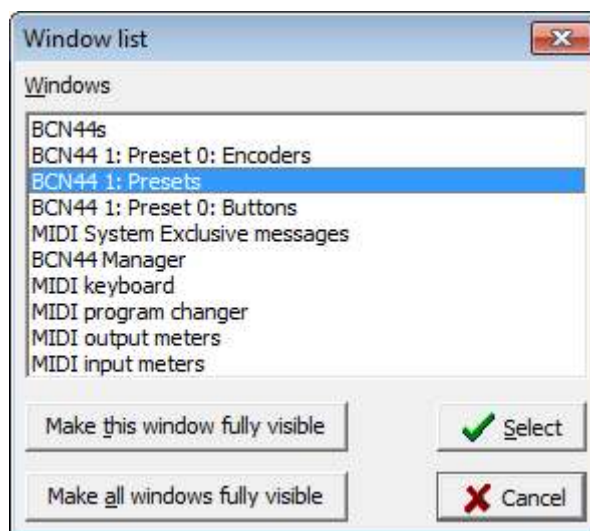
- The default 'Windows' skin isn't really a skin: it's simply the current interface of the Windows version you are running. So for instance if your computer is using an Aero theme on Windows 7, that's what the 'Windows' skin will give you; but on Windows 10 it will

- 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.

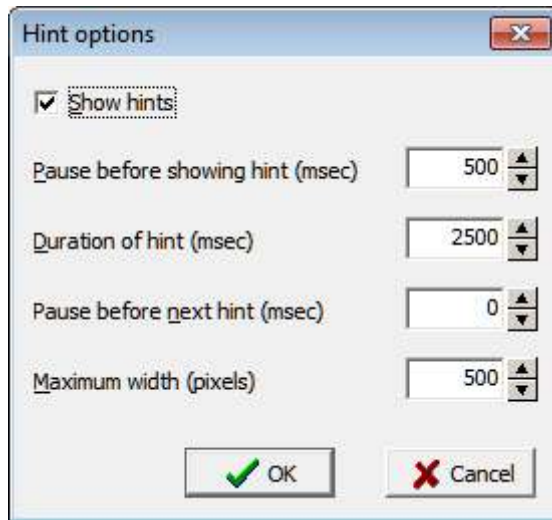
If the highlighted window is partially or completely outside the current monitor(s), you can move it into full view by pressing ‘Make this window fully visible’. ‘Make all windows fully visible’ performs this operation on *all* windows in the list.

Options → MIDI devices:

Opens a dialog box in which you can configure the MIDI devices that BCN44 Manager monitors. See §5 for more information.

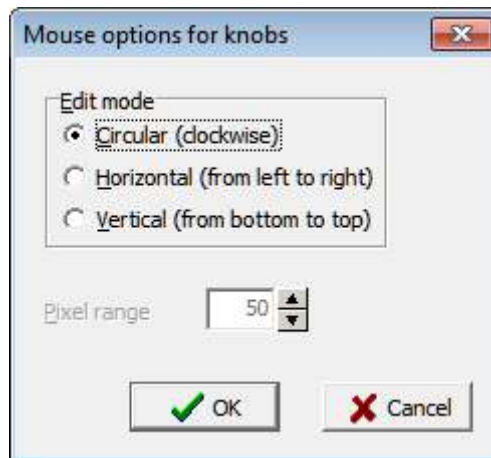
Options → Hints:

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 → Mouse:

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



Help → Keyboard and mouse actions for knobs:

Opens a table containing the computer keyboard and mouse actions that you can apply to parameter knobs:

Key(s)/mouse click	Action
Alt+Enter or Alt+Left click (actual knob)	Open a dialog box in which you can type a new value
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

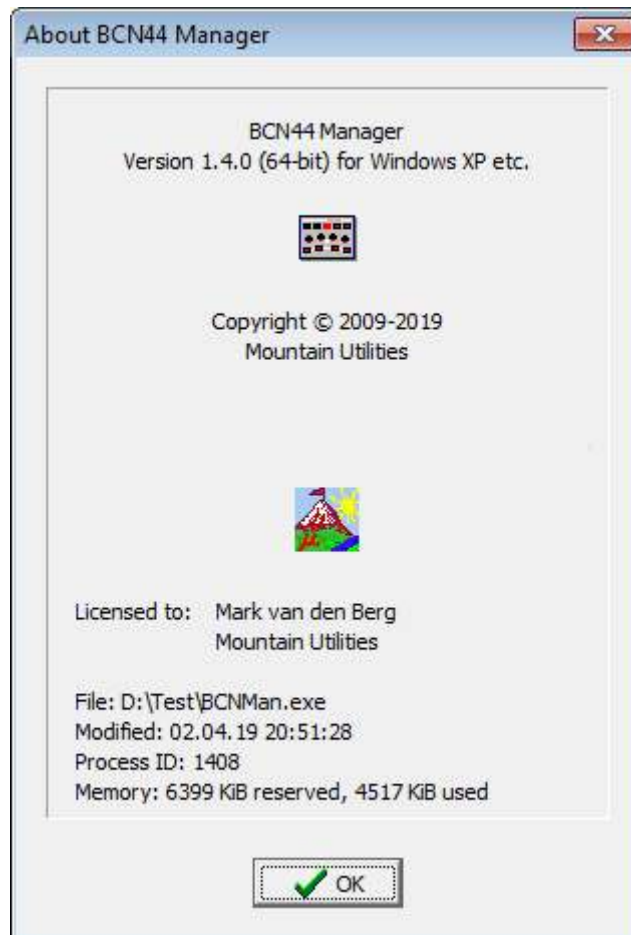
This is basically the same table as the one in §13 in this manual.

Help → Manual:

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

Help → About BCN44 Manager:

Opens a dialog box containing information on BCN44 Manager, such as its version number and memory usage:

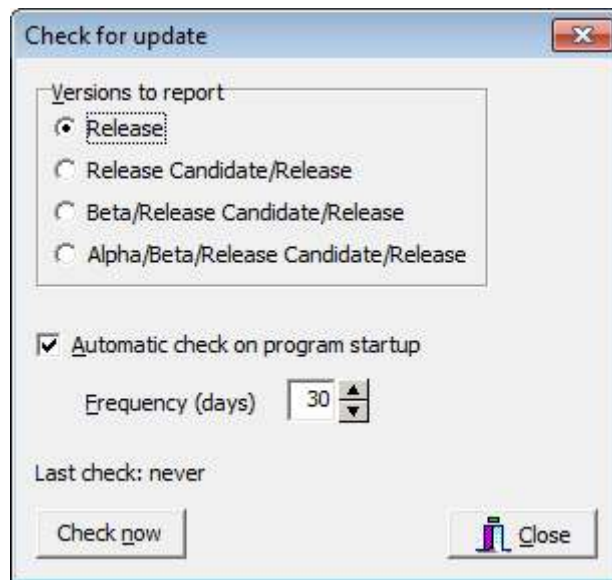


Help → Mountain Utilities web site:

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 BCN44 Manager and other matters related to the BCN44.

Help → Check for update:

Opens a dialog box in which you can set the frequency at which BCN44 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.

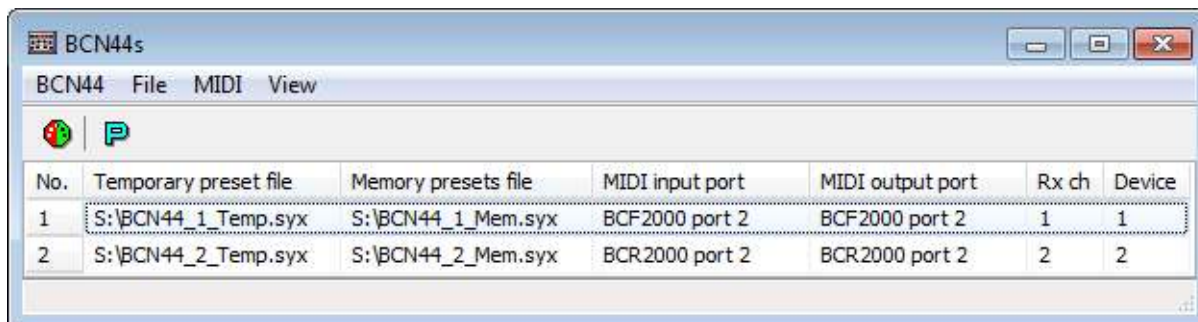
When an update is available, the program asks you whether you wish to open the pertinent web page at the Mountain Utilities site. You can also check for updates manually, by pressing the 'Check now' button.

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 BCN44 Manager and support its further development by making a donation.

7. The BCN44s window



The BCN44s window is the gateway to the main functionality of BCN44 Manager. It displays a table showing the BCN44s (maximally 16) that BCN44 Manager currently maintains in the computer's RAM. These representations in RAM can be loaded from and saved to files, and received from and sent to actual BCN44s.

The toolbar merely contains two buttons, duplicating the 'MIDI → Options' and 'View → Presets' menu items.

The menu provides the following operations:

BCN44 → New:

Adds a new BCN44 to the list. (You are then responsible for assigning files and/or MIDI ports to this new BCN44.)

BCN44 → Close selected:

Closes the selected (i.e. highlighted) BCN44. This merely removes BCN44 Manager's internally maintained representation of the BCN44, including the *references* to its preset files and MIDI I/O ports; it does not *delete* the files themselves.

File → Open:

Opens a dialog box in which you can select a syx file containing a temporary preset or memory presets that you want to load into the selected BCN44 (as maintained by BCN44 Manager).

File → Save → Temporary preset (0):

Opens a dialog box in which you can select a syx file to which you want to save the temporary preset of the selected BCN44 (as maintained by BCN44 Manager).

File → Save → Memory presets (1-99):

Opens a dialog box in which you can select a syx file to which you want to save all the memory presets of the selected BCN44 (as maintained by BCN44 Manager).

File → 1-10 *filename*:

The names of the (max. 10) most recently accessed file names are shown: if you select a file, that file is reopened.

File → Detach:

Detaches the temporary preset file and the memory presets file from the selected BCN44. (Note

that these files are not *deleted*.)

This operation is mainly useful when you wish to transfer preset files from one BCN44 to another: whereas BCN44 Manager does allow you to associate a file with more than one BCN44 simultaneously, it is advisable to detach the file from the 'old' BCN44 to avoid confusion.

MIDI → Receive:

Opens a dialog box inviting you to execute one or more 'SINGLE' and/or 'ALL' preset dumps from the connected BCN44 to BCN44 Manager:



The dialog box tells you which presets BCN44 Manager has received in real time. Press OK after you have performed all desired dumps. Any presets received from the connected BCN44 will be loaded into BCN44 Manager's representation of the selected BCN44.

MIDI → Send → Temporary preset (0):

Sends the selected BCN44's temporary preset (as maintained by BCN44 Manager) to the connected BCN44.

MIDI → Send → Memory presets (1-99):

Sends the selected BCN44's memory presets (as maintained by BCN44 Manager) to the connected BCN44.

MIDI → Options:

Opens the 'BCN44: MIDI options' dialog box. See §5 for further discussion.

View → Presets:

Opens the Presets window of the selected BCN44. See §8 for more information.

View → Desktop:

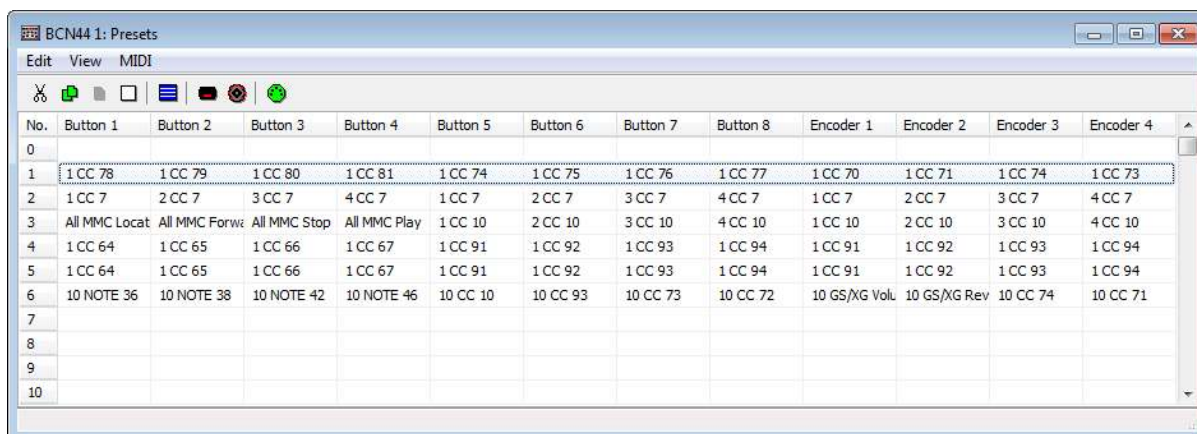
A submenu from which you can open and save BCN44 desktop ('.44d') files.

A BCN44 desktop file contains the positions, sizes and states (hidden/visible/minimized) of the Presets, Buttons and Encoders windows of a single BCN44.

By opening a (previously saved) BCN44 desktop file you can quickly switch from one layout to another. Note that a BCN44 desktop file can be used for *any* BCN44, not just the one for which it was saved.

8. The Presets window

A Presets window displays a table containing basic descriptions of the buttons and encoders of the temporary and memory presets of a BCN44. Note that preset 0 is the temporary preset, and presets 1 to 99 are the memory presets.



The screenshot shows a window titled "BCN44 1: Presets" with a menu bar (Edit, View, MIDI) and a toolbar. Below is a table with 13 columns: No., Button 1, Button 2, Button 3, Button 4, Button 5, Button 6, Button 7, Button 8, Encoder 1, Encoder 2, Encoder 3, and Encoder 4. The table contains 11 rows of data, with row 1 highlighted.

No.	Button 1	Button 2	Button 3	Button 4	Button 5	Button 6	Button 7	Button 8	Encoder 1	Encoder 2	Encoder 3	Encoder 4
0												
1	1 CC 78	1 CC 79	1 CC 80	1 CC 81	1 CC 74	1 CC 75	1 CC 76	1 CC 77	1 CC 70	1 CC 71	1 CC 74	1 CC 73
2	1 CC 7	2 CC 7	3 CC 7	4 CC 7	1 CC 7	2 CC 7	3 CC 7	4 CC 7	1 CC 7	2 CC 7	3 CC 7	4 CC 7
3	All MMC Locat	All MMC Forw	All MMC Stop	All MMC Play	1 CC 10	2 CC 10	3 CC 10	4 CC 10	1 CC 10	2 CC 10	3 CC 10	4 CC 10
4	1 CC 64	1 CC 65	1 CC 66	1 CC 67	1 CC 91	1 CC 92	1 CC 93	1 CC 94	1 CC 91	1 CC 92	1 CC 93	1 CC 94
5	1 CC 64	1 CC 65	1 CC 66	1 CC 67	1 CC 91	1 CC 92	1 CC 93	1 CC 94	1 CC 91	1 CC 92	1 CC 93	1 CC 94
6	10 NOTE 36	10 NOTE 38	10 NOTE 42	10 NOTE 46	10 CC 10	10 CC 93	10 CC 73	10 CC 72	10 GS/XG Volu	10 GS/XG Rev	10 CC 74	10 CC 71
7												
8												
9												
10												

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

The menu provides the following operations:

Edit → Cut:

Copies the selected preset(s) to the preset clipboard and initializes the selected preset(s).

Edit → Copy:

Copies the selected preset(s) to the preset clipboard.

Edit → Paste:

Pastes the preset clipboard to the selected preset(s).

Edit → Initialize:

Initializes the selected preset(s).

Edit → Select all:

Selects all presets.

Edit → Copy to preset 0:

Copies the selected memory preset to preset 0 (i.e. the temporary preset).

View → Buttons:

Opens the Buttons window of the same BCN44. In this window you can edit the individual buttons of the BCN44.

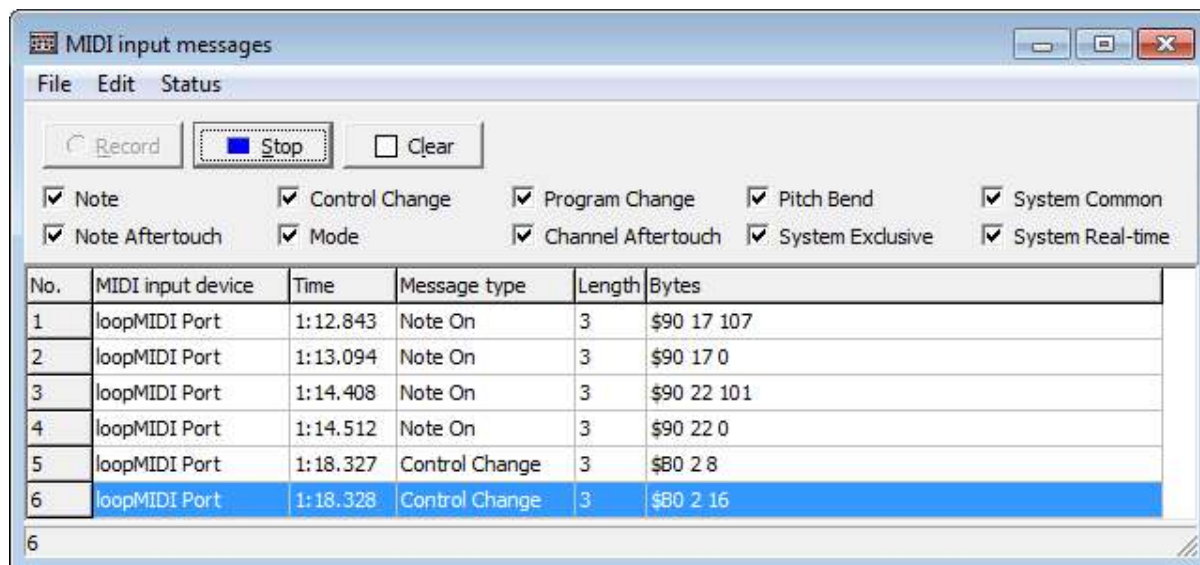
View → Encoders:

Opens the Encoders window of the same BCN44. In this window you can edit the individual encoders of the BCN44.

MIDI → Send selected preset(s):
Sends the selected preset(s) to the connected BCN44.

9. 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 BCN44 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 BCN44's output messages. You can also copy recorded messages to the 'MIDI message clipboard' for inclusion in 'Custom' ⇒ 'Bytes' definitions of BCN44 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 BCN44 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 ('BCN44 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 BCN44 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:

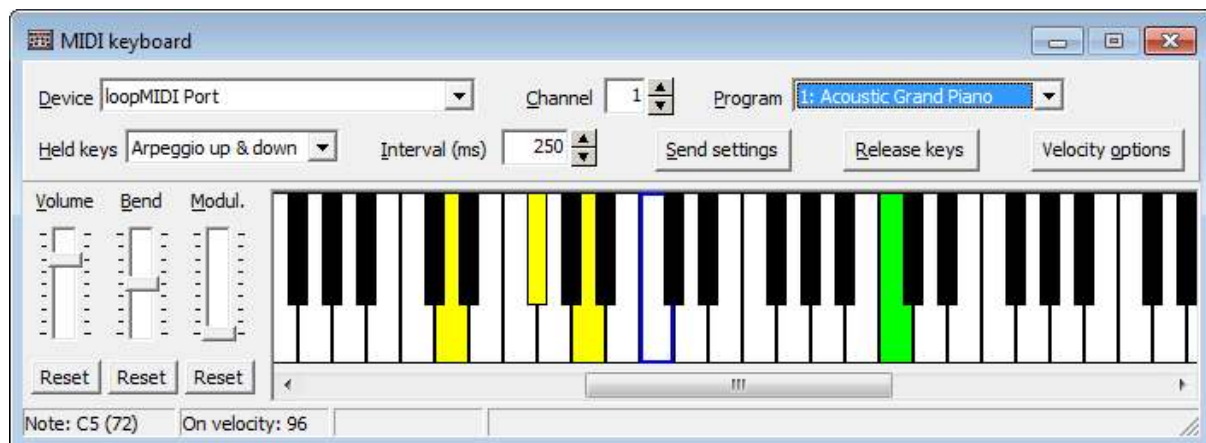
These buttons duplicate the corresponding menu items.

Note/Note aftertouch/etc.:

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

10. The MIDI keyboard

The MIDI keyboard is accessible from the main window's View pull-down menu (→ MIDI → Keyboard).

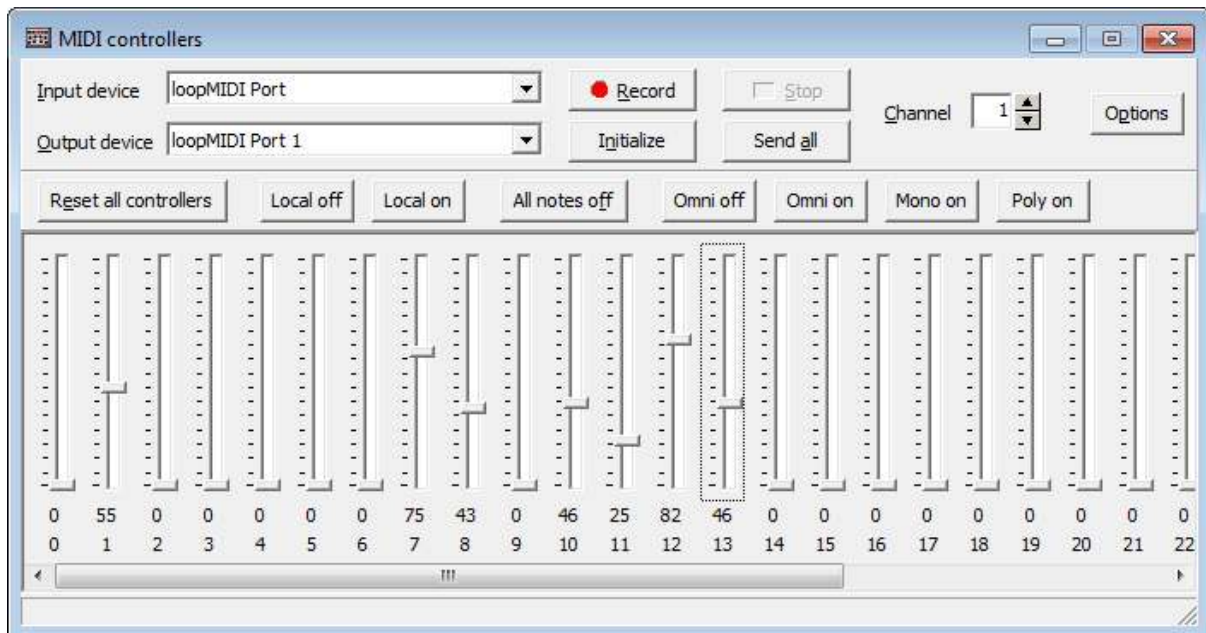


From the MIDI keyboard you can send note messages (and several related other messages) to any MIDI output device (e.g. a synthesizer):

- Note names displayed on the status bar follow the Roland octave numbering protocol.
- On the keyboard, Middle C (#60, C4) has a blue border.
- Pressing the 'Send settings' button sends the selected program, volume, pitch bend and modulation to the selected MIDI output device.
- To play an *individual* note, *left-click* on a key: the key turns green for as long as you keep the mouse-button pressed.
- To *hold* a note, *right-click* on a key: the key turns yellow, until you click it again (or clear all held keys).
- The 'Held keys' drop-down box determines how the held keys are interpreted: they can be played as a chord (i.e. simultaneously) or as arpeggios.
- 'Interval (ms)' determines the chord or arpeggio time interval.
- Pressing the 'Release keys' button clears all currently held keys.
- If you hold the Shift key while left-clicking or right-clicking, all currently held notes are cleared before the newly selected note is played or held. (In other words: it's as if you've pressed the 'Release keys' button.)
- Beware: the chord/arpeggio timing is not very accurate, because the 'simple' Windows timer is used (rather than the multi-media timer, which is more exact but also puts a larger strain on the computer). In particular, performing actions like opening a listbox may stall the timer. In other words: don't try to use the chord/arpeggio modes for actual music production!

11. The MIDI controllers window

The MIDI controllers window is accessible from the main window via the View pull-down menu → MIDI → Controllers.



This window allows you to send MIDI Control Change messages and to monitor incoming MIDI Control Change messages.

Each of the 128 MIDI controllers (0-127) has its own fader:

- Moving a fader (via mouse or computer keyboard) changes the value of the controller and outputs the corresponding MIDI Control Change message on the selected MIDI channel to the selected MIDI output device.

Moving a fader via the computer keyboard works as follows:

- Arrow Up: +1
- Arrow Down: -1
- Page Up: +8
- Page Down: -8
- Home: set 127 (maximum)
- End: set 0 (minimum)
- If the Record button has been pressed, the faders react to incoming messages on the selected MIDI channel of the selected MIDI input device. To stop recording, press the Stop button.

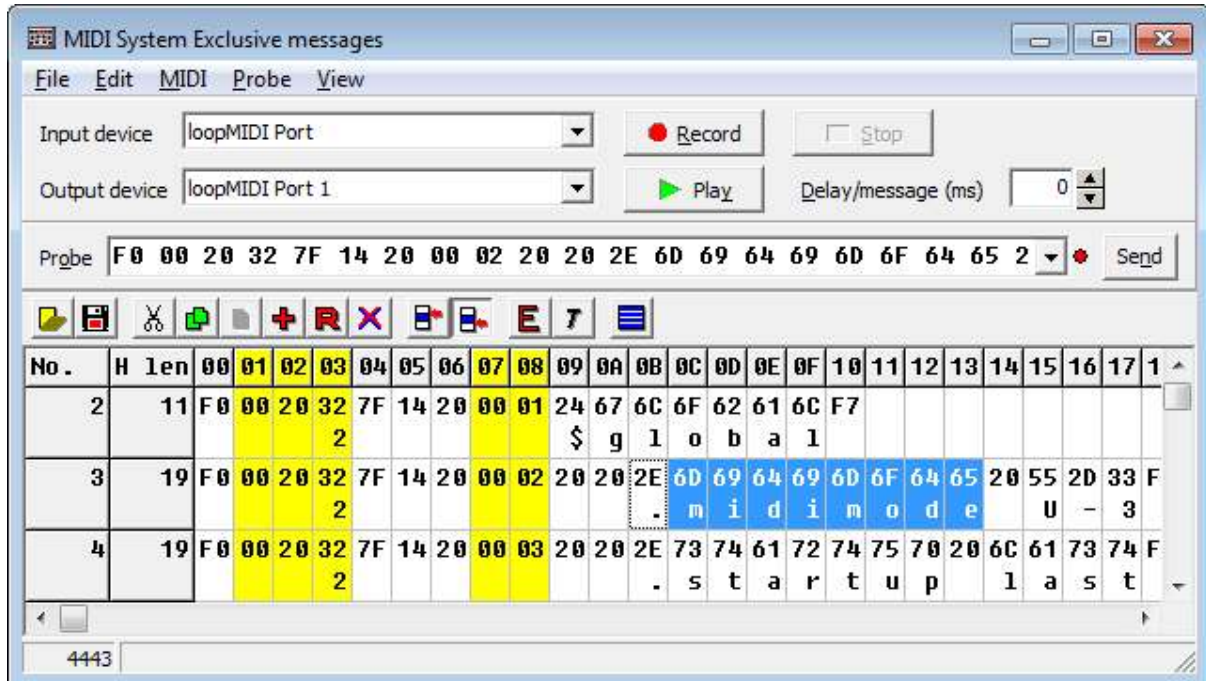
The functions of the other buttons:

- The Initialize button sets all visible controllers (as defined in the Options dialog box, described below) to 0.
- The 'Send all' button sends the values of all visible controllers (as defined in the Options dialog box).
- The buttons labelled 'Reset all controllers', 'Local off' etc. send particular mode messages (using controllers 121-127). For instance, pressing 'Reset all controllers' outputs a Control Change message using controller 121 with a value of 0. Note that the corresponding fader is updated accordingly.

- The Options button opens a dialog box called ‘MIDI controllers: options’, in which you can customize the following things:
 - Whether the mode message buttons (‘Reset all controllers’, ‘Local off’ etc.) are shown.
 - How big the faders of the controllers are.
 - How many controllers are visible per row.
 - Which controllers are visible. (The buttons on the right of the dialog box are ‘macros’, selecting particular ranges.)

12. The MIDI System Exclusive messages window

The MIDI System Exclusive messages window is accessible from the main window via the View pull-down menu → MIDI → ‘System Exclusive messages’.



In this window you can create and edit SysEx messages, but also insert SysEx messages from syx files, save messages to syx files, and record and play SysEx messages.

Furthermore, you can extract the SysEx messages from a standard MIDI (‘.mid’) file and save them to syx files. One syx file is created for each MIDI track (in the mid file) containing one or more SysEx messages.

The window contains three panels:

1. The MIDI panel.

Here you can select the MIDI input and output devices.

When you press Record, incoming messages will be recorded into the grid below the toolbar.

When you press Play, the messages selected in the grid are played, with the pause between messages being determined by ‘Delay/message (ms)’.

Note that ‘Delay/message (ms)’ is also applied when you press Send in the probe panel if the probe line contains more than one message.

2. The probe panel.

This panel contains an editbox in which you can type one or more SysEx messages as a sequence of bytes (in bare hexadecimal format, separated by spaces), which you can send to the selected MIDI output device.

You can also save and reopen the history list of the editbox to/from text (‘.txt’) files.

3. The toolbar.

This contains a number of buttons performing actions related to the grid below.

The grid below the toolbar contains a sequence of messages (recorded/opened/edited). You can edit the data in this grid in two ways: per byte or per message.

Both the probe panel and the grid allow you to correct the checksums of Roland DT1 and RQ1 messages, either automatically or on demand:

- If 'Auto-correct Roland checksum(s)' in the Edit pull-down menu has been ticked, the 'Edit byte(s)' and 'Edit message(s)' operations automatically correct any invalid Roland checksums resulting from your edits to the grid.
- If 'Auto-correct Roland checksum(s)' in the Probe pull-down menu has been ticked, the message(s) in the probe editbox are automatically corrected when you execute Send.
- When you execute 'Correct Roland checksum(s)' from the Edit pull-down menu, any invalid checksums in the selected messages in the grid get corrected.
- When you execute 'Correct Roland checksum(s)' from the Probe pull-down menu, any invalid checksums in the probe editbox get corrected.

From the View pull-down menu you can customize the window in several ways:

- You can hide any of the three panels (MIDI, probe, toolbar).
- You can include or exclude the horizontal and vertical grid lines, separately for the header and leader cells (gray in the screenshot above) and the (white) data cells.
- You can display the message lengths in decimal or hexadecimal format.
- You can display the message bytes in various formats: decimal, hexadecimal (the default), binary and character (insofar as the bytes are in the ASCII range). Note that you can select as many formats simultaneously as you like: each format is displayed on a separate line.
- If 'Select row' is on, you can only select (and edit) whole lines (messages); if it is off, you can select (and edit) blocks of bytes. Note that in the latter case certain operations (like Play and 'Correct Roland checksum(s)') still use the *whole* message(s) of the selected bytes.
- You can highlight/unhighlight any column by right-clicking anywhere in the column or by executing View → 'Highlight selected column' from the menu. (Cf. the yellow columns in the image above.) You can even customize the highlight color.

13. Using the computer keyboard and mouse

BCN44 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

14. Known problems

MIDI Thru:

BCN44 Manager's MIDI Thru feature only passes on *short* MIDI messages, i.e. any message *except* SysEx (System Exclusive).

This is because BCN44 Manager achieves its MIDI Thru feature by simply calling the `midiConnect` function in Windows' `MMSYSTEM` library: basically Windows handles all Thru traffic behind BCN44 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 BCN44 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.

USB MIDI ports:

You should not connect or disconnect a MIDI-to-USB device via its USB cable while BCN44 Manager is running, since this may lead to nasty error messages; instead, you must exit and restart BCN44 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 1024×768 pixels, but you can run into problems when you decrease the screen size of a virtual machine running BCN44 Manager.