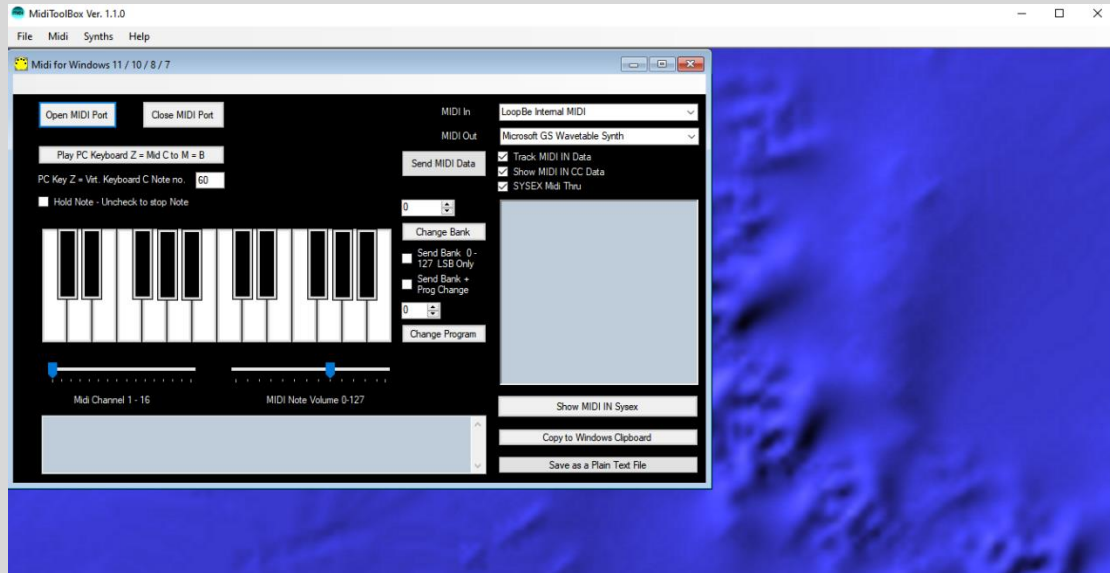# MIDI TOOLBOX

# DOCUMENTATION



## Software Version 1.1.4

Documentation date 29th December 2023

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# Contents

## WELCOME

I started writing music software in 1980.  It was on a BBC Micro connected to a Korg MS20 and two MS50s. It was a sequencer program when hardly any software sequencers existed. I wrote MidiToolbox as a way of simply importing midi dumps into my Korg Triton Controller software. The Triton Controller works along-side of MidiToolBox and MIDI dumps can be collected by it and then imported into the Triton Controller, using copy and paste or via a plain text file. Once the dump is in the Triton Controller it can be inserted a PCG file in its librarian, stored and then sent out again to the Triton.

However, the software will collect midi dumps, CC messages and note data from any instrument, and they can be saved. It also has a virtual keyboard and can send note, sysex and CC messages. In fact any MIDI message. Its written in the latest version of Microsoft Visual Studio 2022. The software allows the playing of midi synths from the inbuilt virtual 88 note keyboard and allows the importing of sysex data such as midi dumps. It also monitors midi traffic. Included with it is one of my synths – The Blue Synth - and an arpeggiator, MIDI recorder and player.

If you use a Mac that's your studio computer then you can still use MidiToolBox. See later.

The software is donation-ware so if you like it please donate to Paypal using my email address stuartpryer@gmail.com. Have fun with this little app.


Stuart Pryer

Cornwall

June 2022

## INSTALLING ON A PC - WINDOWS

To install on a Windows computer, log on with administrator rights and run the installer miditoolboxsetup.msi.

The MSI contains the software, installer, free synths and pdf manuals. There is a separate executable setup.exe which checks the .net framework on your pc is up to date (4.6.1 or higher) and the software installation is properly managed.  The synths and documentation will be installed in the programme directory. C:\program files\miditoolboxsetup for 32 bit operating systems or c:\program files (x86)\miditoolboxsetup for 64 bit OS versions of Windows.

The PC should be running Windows 7 to 11.  32 or 64 bit. Updated with .net 4.6.1 or higher. Recommended PC spec. Intel Core i3 or higher, 4GB RAM, Screen resolution 1280x720 or higher.  The software takes up about 18 Mb of disk space.

It has been written in the latest version of Microsoft Visual Studio 2022 and the installer has been created using the Microsoft Vsix installer project.  It is a 32 bit application and can also run on 64 bit systems.

NB. Software updates will normally consist of just an updated MSI file and setup.exe. If you have installed an older version it **must** be uninstalled first before you install a later version.

Note. The shortcut below will be placed on the windows desktop, add and remove programs list and the start menu.

## USER MANUAL

This pdf help file miditoolbox.pdf will be copied to the same folder as the software's exe file during installation.  Normally C:\program files\.... - do not change the pdfs name.   NB. The help file won't work if you name it 'something else' or it's placed in another folder.  You will be able to access it from the program 'Help' Menu which will automatically open your default browsers and then open the file.

## USING THE SOFTWARE

Your PC should be located adjacent to the keyboard. Ideally with the keyboard of the PC at right angles or above the keyboard. As the software is mainly mouse driven, all you really need near the keyboard is a screen and mouse. Connect the two devices using midi cables or usb between the PC's midi port/usb port and the synth.  USB hubs are not recommended.

When you run the program, configure the midi device by using the **'Settings'** form. Then set the midi channel of the software (I normally use 1 – this is the default value). Then open the midi port.

Please contact me if you have any problems.

## WORKFLOW

1. The software receives Midi CC messages, note messages and System Exclusive (sysex) messages. it can accept Midi dumps and they can be saved to the windows clipboard or to a file.
2. It can also send any MIDI data including sysex , note data and CC data.
3. If you are using it with the Triton Controller software you can import edited programs, combis etc back into the Triton Controller software from the Triton using midi dumps and use the Triton Controllers librarian features, see later.

## PART 1 – MIDI

## FILE MENU
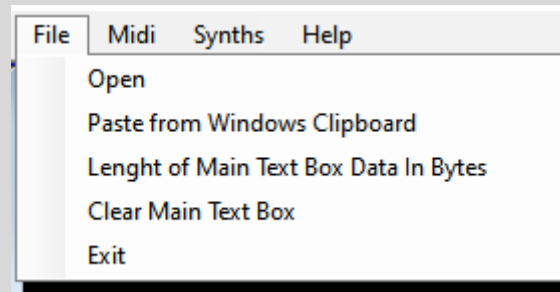


1. Open – Use this to open a previously saved Plain Text file to the Main Text Box on the RHS of the MIDI settings form.

2. Paste from Windows Clipboard – pastes any plain text to the Main Text Box.

3. Length of Data in Bytes – This is the number of bytes shown in the Main text box RHS.  You can use this for checking that the size of the Sysex Dump is correct. Note that a Midi data dump starts with F0 and end with F7 as it is sysex (System Exclusive) data.

4. Clear Main Textbox – clears the RHS text box of data.

5. To Exit the program click on the 'File/ Exit' drop down menu at the top left when the composer form is loaded.  The software will close the midi ports and terminate the program. Use this rather than closing down the window with the windows 'X' top right hand corner of the main window.  This is so all notes are stopped and the midi port is closed properly.

## MIDI MENU
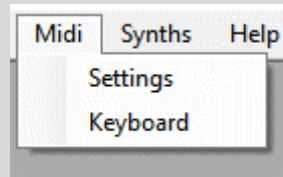


1.  Settings reopens the Midi settings Form if you have closed it.
2.  Keyboard opens the 88 note virtual keyboard.

## SYNTHS MENU

The software comes with a Free Blue Synth and a Midi
Player/recorder/arpeggiator. The remaining synths can be purchased
from my website. VST versions are available when purchased.
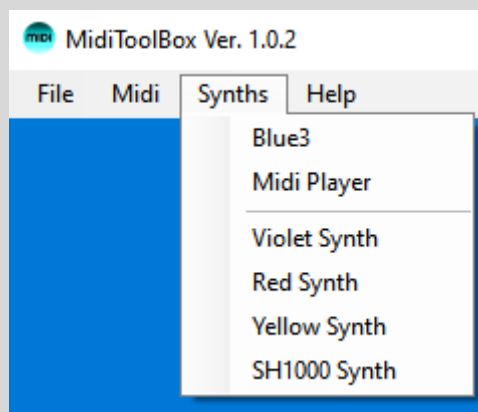


## HELP MENU

This shows a link to my website, 'manual' opens this manual and an about
box. Most controls now have Tool Tips. Hover the mouse over the control
to show them,

## USING THE SOFTWARE

When you run the software the settings form appears.  An example of the midi devices in/out ports are shown below – top right.  Your midi port names will be different. You can select from your available MIDI input and output ports from the drop down boxes.
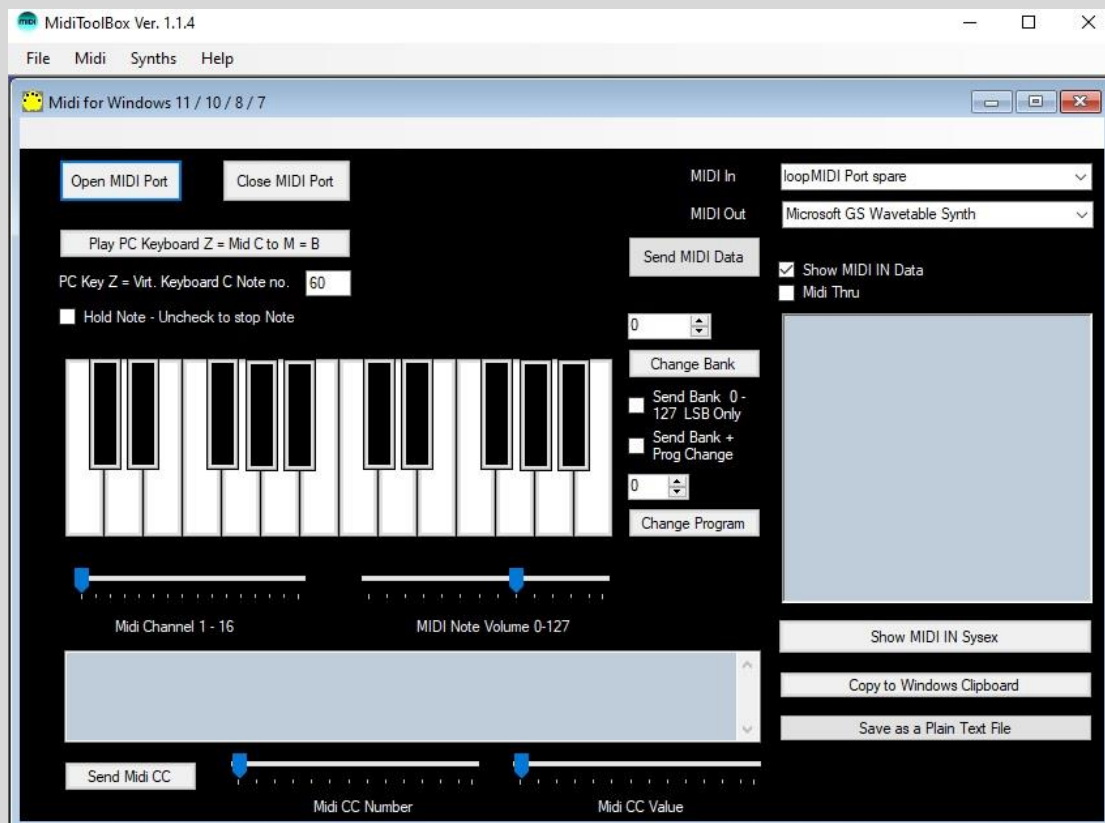


1. Select midi input/output for this app.  Remember if you select the same midi input and output you may get a midi loop if MIDI through is set on the instrument and on the app! This may crash the application, but it depends on the midi drivers behaviour.
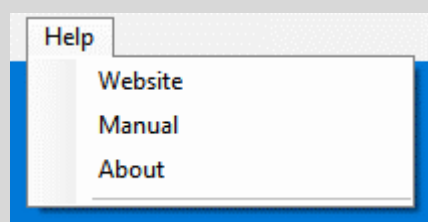2. Set midi channel to correct channel – default on this software is 1 (so you can normally leave it at that).
3. Press 'Open Midi Port' Button.
4. Use the mouse to play the virtual keyboard - OR
5. You can play the Midi software or instrument from the PC keyboard.  Press 'Play PC Keyboard Z = Mid C…' button **immediately before** playing the pc keyboard.

To check all is working, if you play a note on the virtual piano keyboard or PC keyboard your instrument should sound.

# THE VIRTUAL KEYBOARD
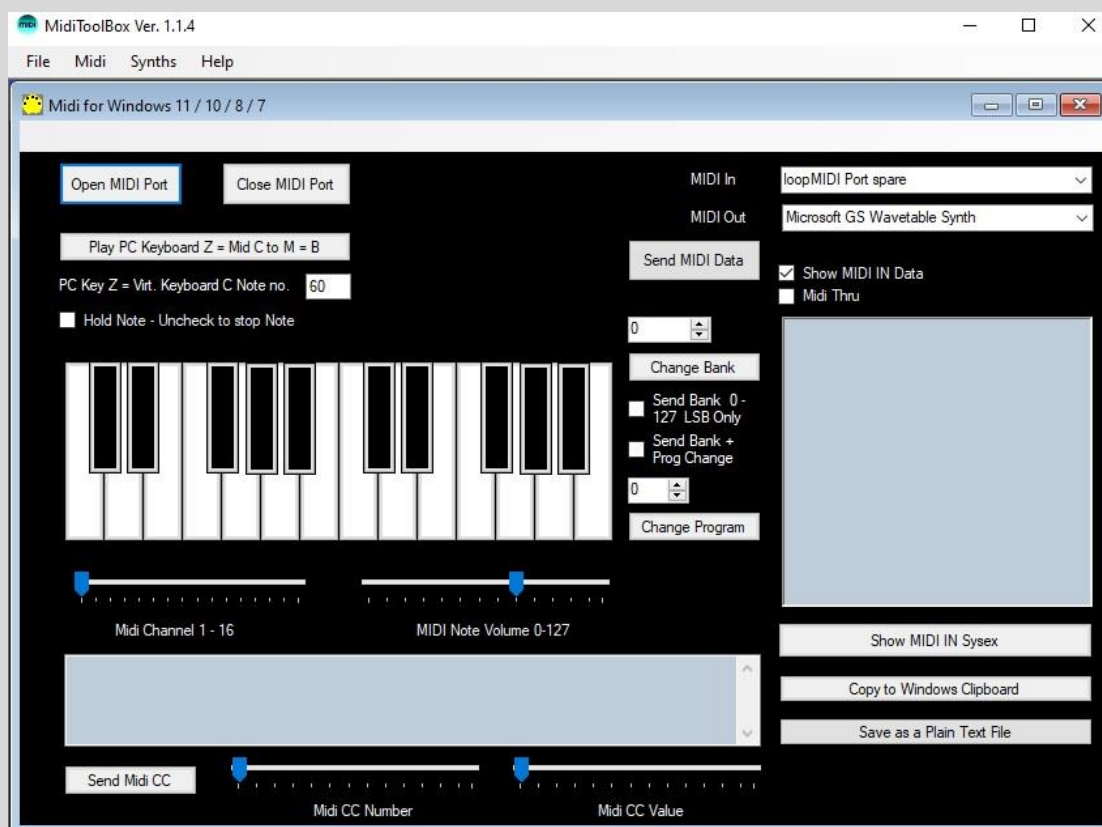


The MIDI form has a virtual keyboard for remotely playing Midi software or devices whilst you edit their sounds on the PC. The keyboard has a range of 2 octaves. A bigger 88 note keyboard is also available that can also play chords.

If you want to play the Midi software or device using the PC keyboard – press the 'Play PC Keyboard Z =….' Button on the midi settings form just before playing.  You must press the 'PC keyboard' button every time - immediately before you use the PC keyboard to play the Midi software or device. PC Key z = Note C.  s = note C#.  x = note D.  etc.  The notes run from z s x d c v g b h n j m.  Which map to C, C#, D, D# etc.  The 'PC Keyboard' is polyphonic and you can play chords.  By the way the polyphony depends on your PC.  Depends on the PC keyboard buffer.

The pitch of note Z = Virtual Keyboard C = Midi Note text box at the top left of the form. This facility to play from the PC keyboard has been added to enable the user to audition sounds whilst editing.  You can set the Midi Channel and the Midi note volume using the sliders.

## SENDING NOTE DATA

If you want to send note data to play an instrument you will need to route this apps midi out to the instrument's MIDI in. Set the midi in channel of the instrument to the same Midi channel number as this apps. 1 as default.

**TIP**. For internal PC midi routing, such as playing a virtual instrument from MidiToolbox :-

1. On a PC Download the Freeware applications – Either LoopMidi, Midi Yoke or LoopBe1. For internal PC midi routing I recommend LoopMidi.
2. Set the Midi **input** of the VST (DAW) to say Midi port 1
3. Set miditoolbox midi **output** to LoopMidi port 1
4. You can now send midi data from this application to the virtual instrument (DAW)!
5. To pick up midi dumps, the instruments midi output needs to be set the same as miditoolbox's input. This is because data is flowing the other way. Make sure Midi Thru is not checked to prevent MIDI loops.

## SENDING BANK AND PROGRAM CHANGE MIDI MESSAGES

You can change the MIDI program (sound) and Banks on your midi instrument.   Note that some midi instruments use MIDI Sysex for Bank Change, so Bank change may not work but program change should.
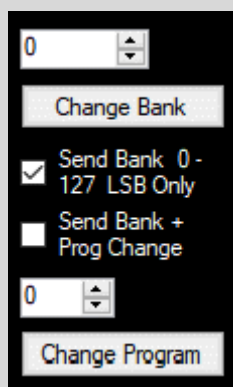


Set the programme number 0 to 127 and press button "Change Program". "0" is Piano in General MIDI which is the default when the software loads.  See General MIDI instrument list earlier in this document.

Bank change can more problematic as different manufacturers deal with this differently. If you need to change the Bank to something different than 0 you can also try changing Bank. There are 128 x 128 = 16384 banks available in principle in the MIDI specification, most instruments only use a few of these. How this is implemented depends on the manufacturer/instrument so see their manuals. Note to access over 128 banks, two Bank Change messages must be sent in succession. Enter a number between 0 and 16383.
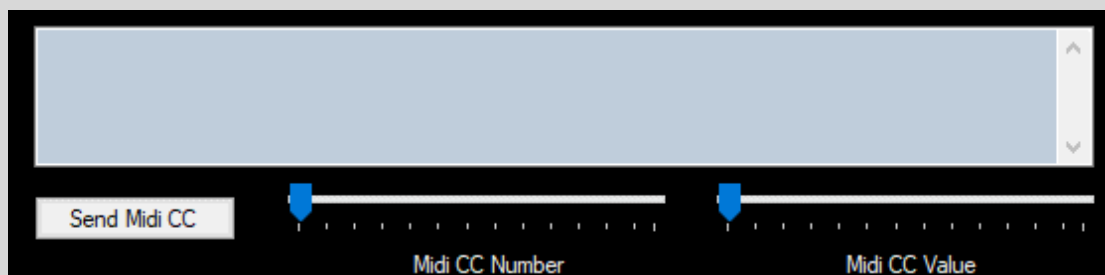
To try it. Set Bank (between 0 to 127 to start with) in decimal and click 'Change Bank'.  Normally instruments need the program change message sent immediately for this to work, so try also checking 'Send Prog + Bank Change' check box if it does not work.

Note that if you set the MIDI channel to "10" and Bank to 0, you will get the General Midi percussion instruments with each key sounding a different percussion instrument. Different programs have different drum kits.

## SENDING MIDI CC CONTROL CHANGE MESSAGES

If you want to send Midi CC Control Change to the software's Midi Out then select the controller number 0 to 127 using the left-hand slider and the controllers value right hand slider at the bottom of the form. Press the Send CC button after adjusting the CC Controller number and its Value.

Note. Some CC controller numbers require two Midi CCs to be sent in quick succession – eg Bank Change – this has its own section on the form. These require a separate MSB/LSB as the number of values available is over 127.

## SENDING MIDI DATA



If you want to send sysex data, or a sysex dump or any MIDI message to your instrument you can enter the MIDI commands in the main text box.:

1.  Open Midi Ports
2.  Clear main text box – file menu\clear…
3.  Enter your MIDI data or paste it into the main textbox. Sysex data must start with F0 and end with F7.  The data you enter is up to you after consulting the instruments manual and any checksums must be included. Korg don't use these but Roland do.
4.  Press 'Send MIDI Data'. All in HEX pairs. Eg. Sysex is F0 XX XX XX… F7  where the XX are hex pairs.
5.  The bottom text box will confirm it is sent. How long it takes to send depends on the Midi bandwidth/the instruments buffers and the length of data. A sysex message of 540 bytes takes 0.2 seconds on my Korg Triton.

If you use this to send Sysex make sure you understand the instruments sysex implementation from its manuals. Incorrect sysex commands can lock the instrument up. Normally a reboot solves it. Use at your own risk.

Below is an example of a sysex string to change a parameter on the Roland RD 2000. The first 6 pairs of hex starting F0 is the header for the instrument. The middle section is the data to change a parameter. The final two pairs are the checksum and F7. Where XX are your specific parameters from the Rd2000 manual. example below.

F0 41 10 00 00 75 12 XX XX XX XX XX…checksum F7

The request to dump sysex you need a header and 11 and then specify the data part required…

F0 41 10 00 00 75 11 XX XX XX XX XX XX XX XX…checksum F7

See example below.

```
F0 41 10 00 00 75 12 09 03 00 00 00 17 F7
```
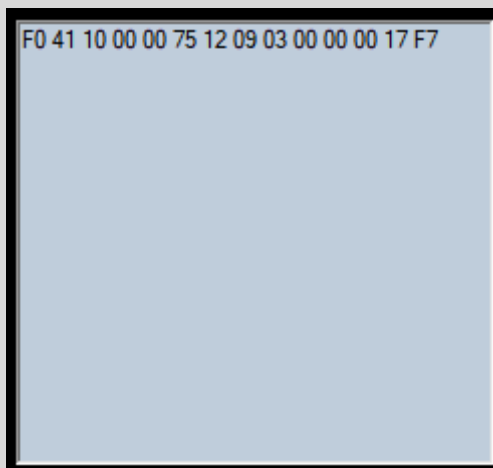
You can also send other Midi data such as Note and CC data for instance from the main text box.

1. Open Midi Ports
2. Clear main text box – only Midi data is allowed.
3. Enter your data or paste it. For instance, a note on message would be 90 40 40. Midi note 40 Hex = 64 decimal say, Volume 40 hex say. Note off 80 00 00. All in Hex pairs. You can also have consecutive messages in the textbox.
4. Press 'Send MIDI Data' button.

Note. The main textbox must only contain MIDI commands – see example below of a note on. Note number 40 hex and volume 40 hex.

```
90 40 40
```
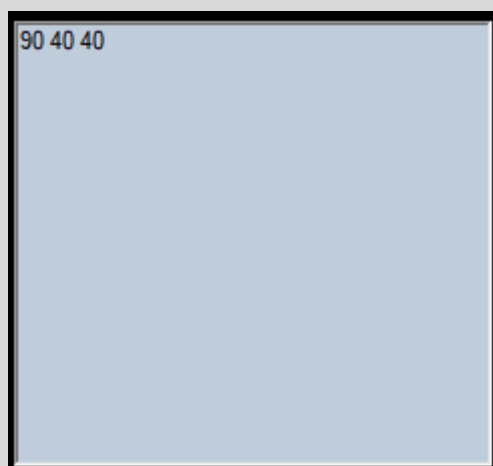
# MIDI 1.0 MESSAGES – A BRIEF SUMMARY

All numbers are in Hex 0 to F. n is midi channel in Hex 0 to F. ie. Base 16.

**MIDI Notes – Channel Voice messages.**

8n (data1) (data 2),  Note Off.
8n in Hex is 128 in decimal (n=0) to specify note off message. n is the Midi Channel. This is treated the same as a note on with volume 0.

9n (data1) (data 2),  Note On.
9n in Hex is 144 in decimal (if midi channel n=0) to specify note on message. Data1 is midi note in hex 0 to 127, data2 volume 0 to 127. If data2 = 0 (volume 0) it is treated as a note off message.

**Control Change CC messages**

An Polyphonic aftertouch (data1) (data 2) – An = 160 in decimal if n=0.

Bn (data1) (data 2),
Bank Change is A Control Change message CC

First message MSB – most significant byte
B in Hex is 176 in decimal (if n=0) to specify CC type message.
n is the Midi Channel.
data1 is 00 and data 2 is 0 to 127 in decimal.
            +
Second message LSB – least significant byte sent in quick succession
B in Hex is 176 in decimal (if n=0) to specify CC type message.
n is the Midi Channel.
data1 is 32 (20 in Hex) and data 2 is 0 to 127 in decimal.

Program Change is:
Cn (data1)
C in Hex (192 in decimal) if n=0 to specify message.
n is the Midi Channel.
data1 is 0 to 127 in decimal

**Other messages**

Dn Channel Aftertouch (data1) (none) -  208 in decimal if n = 0

En Pitch Bend (data1) (data 2) - 224 in decimal if n = 0

F0 System exclusive - 240 in decimal if n=0. (data length variable but includes Instrument manufacturer and instrument identifier at start) ends in F7 End of Exclusive EOX message.

FE (none) (none) Active Sensing (254 in decimal) – This data is filtered so they are passed through but don't show on the main text box as there would be a message every 0.3seconds. This feature was designed to turn off hung notes if a MIDI cable became disconnected. I never had this problem in 40 years of using MIDI.

## REQUESTING SYSEX DUMPS – EXAMPLE ROLAND RD2000

**Hetre is an example of a Midi dump request in sysex.**

F0 = start of sysex string
41 = Roland ID
10 00 00 = Device ID
75 = instrument ID = RD 2000
11 = Message type for request for data from the RD2000

10 00 in this example program data

10 is program/zone
00 – in this example a request for effect data is being sent

Offset = 00 00
01 07 is the size of the data being requested

The final part of the string is the Roland Checksum - to ensure the data is properly sent. Korg don't use a checksum.

F7 ends the sysex string.

Note. To request the dump of sysex data it has to be sent from my RD2000 editor program (which calculates the checksum) or this software or another piece of software. To request dumps for the Korg Triton use my Triton Controller Software which can edit the sounds on the synth, import them and load into Korgs PCG files on the computer.

## RECEIVING NOTE DATA MIDI MESSAGES

Note data is a MIDI Channel Voice Message and is sent whenever a midi instrument is being played.

```
☑ Track MIDI IN Data
☑ Show MIDI IN CC Data
☑ SYSEX Midi Thru

Chnl: 1 note: 71 Volume: 0
Chnl: 1 note: 71 Volume: 80
Chnl: 1 note: 69 Volume: 0
Chnl: 1 note: 69 Volume: 80
Chnl: 1 note: 67 Volume: 0
Chnl: 1 note: 67 Volume: 80
Chnl: 1 note: 65 Volume: 0
Chnl: 1 note: 65 Volume: 80
Chnl: 1 note: 64 Volume: 0
Chnl: 1 note: 64 Volume: 80
Chnl: 1 note: 62 Volume: 0
Chnl: 1 note: 62 Volume: 80
Chnl: 1 note: 60 Volume: 0
Chnl: 1 note: 60 Volume: 80
MIDI IN Open
MIDI OUT Open
```

In the example above I opened the midi porst and sent a series of 7 notes to the app and they appeared like this. The list shows the Midi Channel (1 to 16), note number which will lie between 0 to 127. In this case 60 to 71 each with a volume of 80. (Volume range 0 to 127). With every note in this example there is a following note off message.  Volume 0. The last note is at the top of the list with the oldest at the bottom.
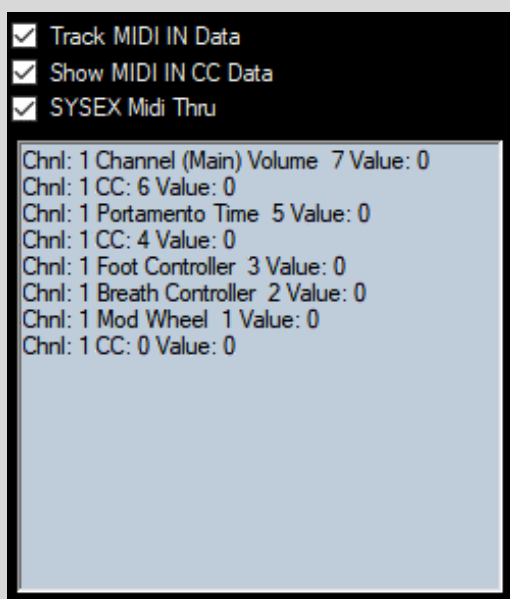
# RECEIVING CONTROL CHANGE CC MIDI MESSAGES

Data shown on the Main text box can be filtered by the top two check boxes as to whether to show Notes and CC messages as they arrive. Newest data at the top of the list. Notes and CC data are always passed through from the Midi input to the output port of the app.

CC data takes the form for example - Bank change
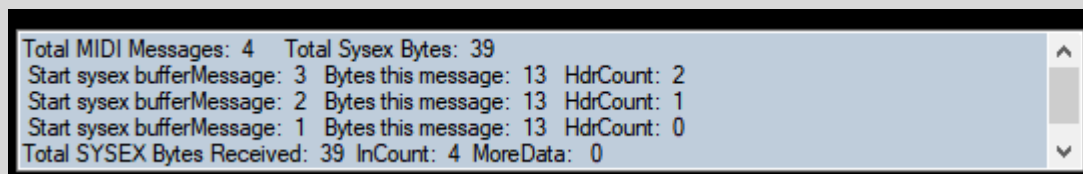
Bn (data1) (data 2),
B in Hex is 176 in decimal (if n=0) to specify CC type message. n is the Midi Channel.

The Control Change CC data has the most common values described by text. See below where I have sent a series of CC messages to the app. Chnl is the MIDI channel the CC message is being sent to. Undefined CC messages just show CC. Sodefined ones such as 'Mod Wheel' = CC 1, Value 0. CC6 is not defined.

```
☑  Track MIDI IN Data
☑  Show MIDI IN CC Data
☑  SYSEX Midi Thru

Chnl: 1 Channel (Main) Volume  7 Value: 0
Chnl: 1 CC: 6 Value: 0
Chnl: 1 Portamento Time  5 Value: 0
Chnl: 1 CC: 4 Value: 0
Chnl: 1 Foot Controller  3 Value: 0
Chnl: 1 Breath Controller  2 Value: 0
Chnl: 1 Mod Wheel  1 Value: 0
Chnl: 1 CC: 0 Value: 0
```

## RECEIVING SYSEX MIDI MESSAGES

A MIDI Sysex (System Exclusive) message starts with F0 and ends with F7. Manufacturers can put mostly what they like in between but they have to start with a manufacturer ID and instrument ID. These messages can control an instrument's settings. To receive a midi data dump from an instrument, set the instruments midi out to the midi in of the app. Instruct the instrument or software (For Korg Triton series the Triton Controller will do the request) to start the dump. Incoming data will be displayed as it comes in together with Sysex data. When the midi sysex dump is complete (F7 at end of sysex data), the bottom text box will report 'Start Sysex Buffer Message'. Together with its sysex message number in list starting at 1 and its size in bytes.  HdrCount is message number – 1.See below.

```
Total MIDI Messages: 4    Total Sysex Bytes: 39
 Start sysex bufferMessage: 3  Bytes this message: 13  HdrCount: 2
 Start sysex bufferMessage: 2  Bytes this message: 13  HdrCount: 1
 Start sysex bufferMessage: 1  Bytes this message: 13  HdrCount: 0
Total SYSEX Bytes Received: 39  InCount: 4  MoreData:  0
```

You can then display Sysex data received in the Miditoolbox main textbox by clicking the 'Show MIDI IN Sysex button. Note the bottom text box shows the total number of midi messages received  by Miditoolbox including any note \ CC data. So 4 in total here, of which 3 were Sysex. The latest Sysex message is at the top of the list and can be displayed.

Tip. Sysex is only shown if the Show MIDI IN Sysex button is pressed to display it after a dump is complete. See below.
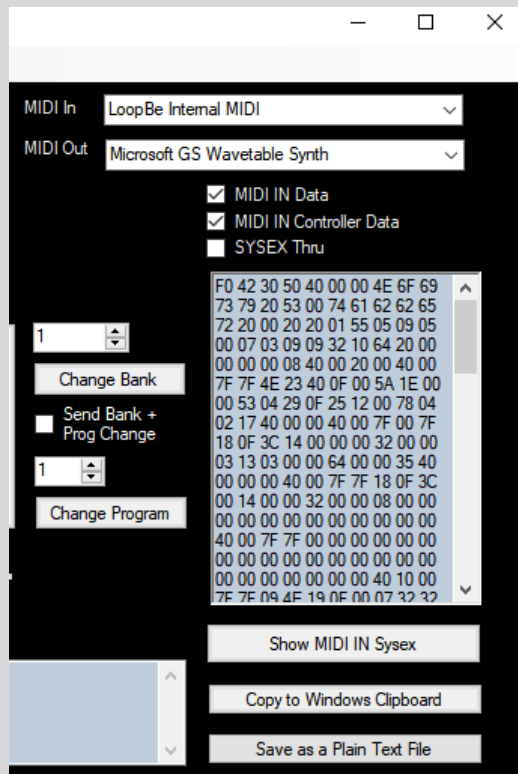
The entire main text box can be 'copied to the windows clipboard'. 'Copy to clipboard' button. This includes the complete dump sysex data. It can be pasted to my Triton Controller app for instance. Open PCG Reader – Edit/Paste

The midi data in the main textbox can also be 'saved as a plain text file' as a backup. Then File\Open in the TC software. Or 'File\Open in this apps 'File menu'.

The 'Midi Through' checkbox allows Sysex data to pass from the midi in port to the midi out port of this app or if unchecked filtered out.

## IMPORTING MIDI DUMPS FOR THE KORG TRITON

You can instruct the Korg Triton to dump individual program data, Moss data, combi data, Drum data and Arp data to a data filer such as my app MidiToolbox. See my website for the free download of MidiToolBox.. This is particularly useful if your Triton media drive is not working or maybe your screen is not working? You can then save the data as a text file and insert in a PCG in the Triton Controller for future use. No need to use floppy disks or other media! Firstly, download and install my app called MidiToolbox.  I wrote this specifically to work with the Triton Controller.

**In MidiToolBox –> To data dump from Triton to PC**
1. Select the Midi-in port of the PC – Midi\Settings - ie. Data is received here from the Tritons midi output port.
2. I set by default the input buffer in midiToolBox to 1024 – this works well with windows 7 or higher

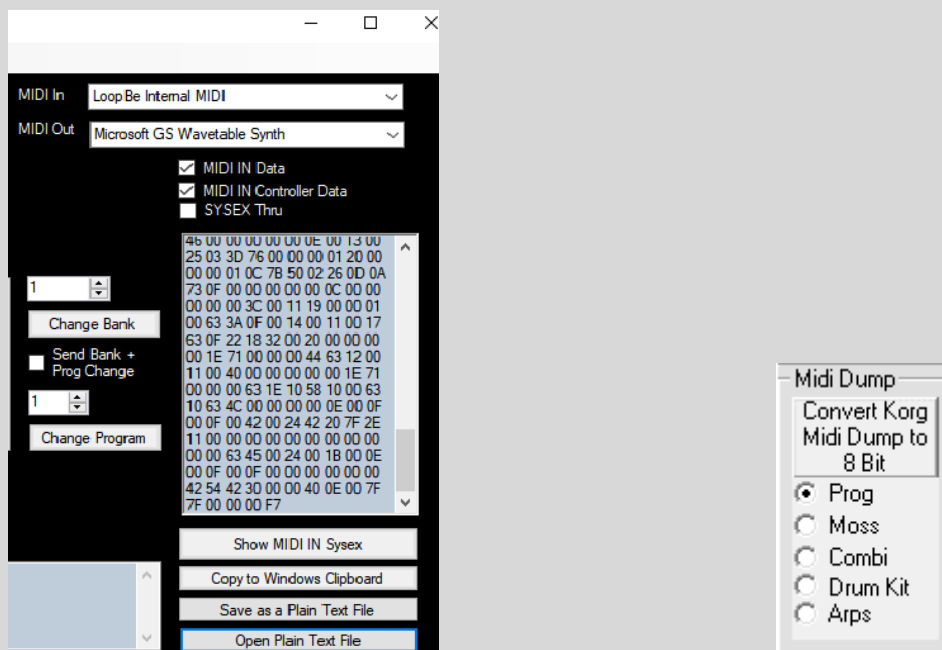**Request Dump from the Triton Controller software**
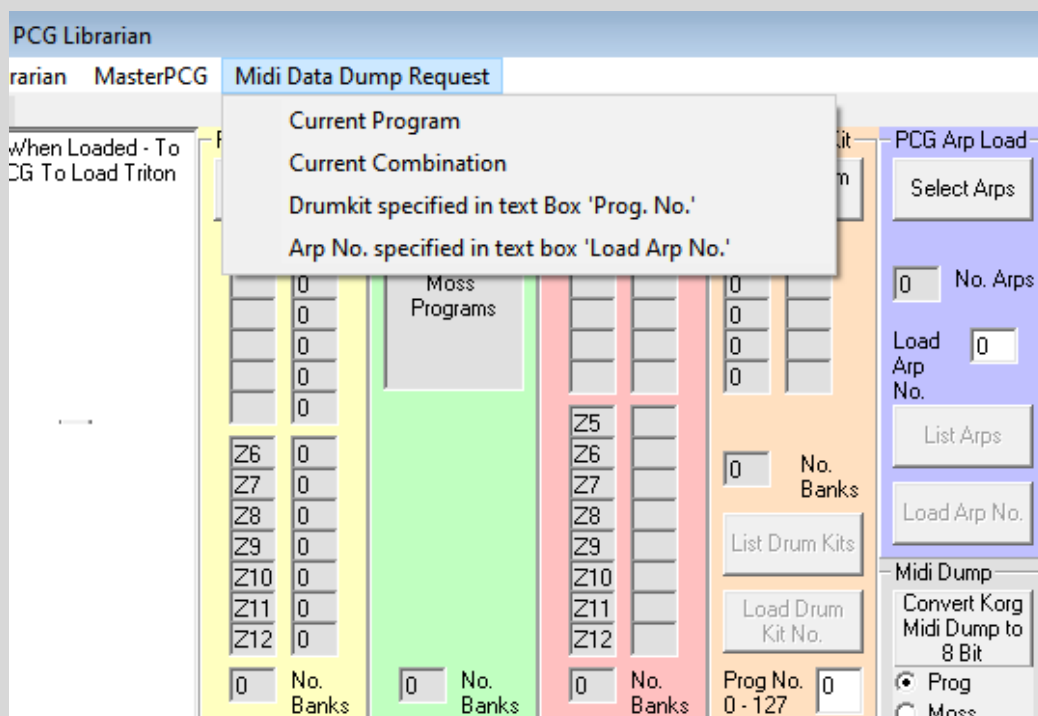


1. Select the MIDO output port. Then select the drop-down menu on the Librarian form

2. This will download the data for the current program, combi or the specified Drum Kit or Arp number.
3. For Drum Kits enter the Drum kit No. first in the white text box 'Prog No. 0-127'. Drum kits 0 to 63.
4. For Arps Enter the Arp number first in the white 'Load Arp No. text box. 0 to 231. Arp number 0 to 231.

**In MidiToolBox**

Note when a dump is requested by the TC it takes under a second to download the dump for a single program. The length data received will be shown in the bottom left textbox.

1. Click 'show midi sysex' and then' copy to the windows clipboard'. Or save as a plain text file. – This dump will be in hex. – note it's a 7 bit format Midi file



**In the Triton controller**
1. In PCG Reader – edit/clear text – this empties the file viewer box
2. Edit/paste – this copies the hex midi dump from the windows clipboard to the File viewer window. Or open the file you saved in MidiToolBox.
3. Use the 'convert midi dump to 8 bit button' on the Triton Controller software. See image above.
4. Now the data is in the same format as the PCG file format. 8 Bit.

## 88 NOTE KEYBOARD
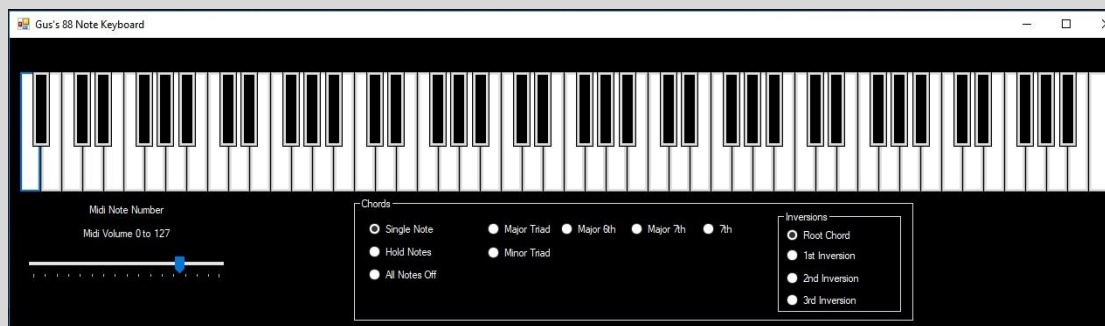


The 88 Note Keyboard is dedicated to Gus at Roland Clan Forums for his fantastic efforts and hard work in testing the RD2000 editor program.

The keyboard is useful when designing sounds as you can hear the entire range of the standard piano keyboard.  First set Midi ports and input/output on the Midi form.

The Midi volume is controlled by the slider on the form.

You can play single notes, hold notes (for creating chords with the mouse) until 'all notes off' selected.  Various chord types are included too, together with their inversions.

## USING MIDI TOOLBOX ON PC VIA A Mac

You can route two-way Midi data via a Mac using the free rtpMIDI program on a PC. rtpMIDI | Tobias Erichsen (tobias-erichsen.de), So if your studio computer is a Mac connected to your instruments you can run this software on a PC and connect to the Mac as an intermediary then to your instruments/midi interfaces.

Below is the Network Midi screen of the Mac (my Studio Computer). Mac Midi setup – Globe. Note the input and output ports are set to Korg – in this case my Triton via a midi interface. It is connected via my network connection (wirelessly or through a network switch) to rtpMidi running on my PC – computer name DESKTOP-DVIV1NU. The latency is 0 to 3ms. The Mac calls it Session1.
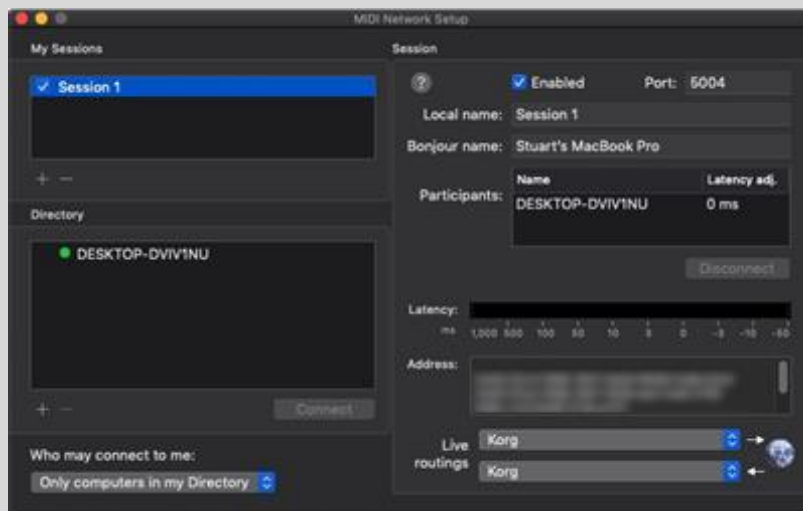


Below is my PC screen. rtpMidi is running and is connected to my Macbook
Enable the session by checking the Enabled box on the PC form
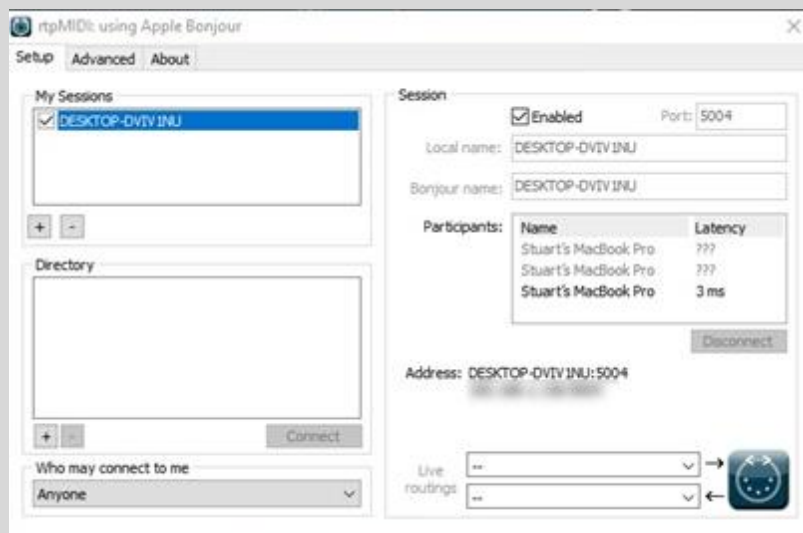


So now a two-way MIDI connection is established between the PC and Mac. On Midi Toolbox set midi input/ output to the name of your pc desktop. In my case Desktop-DVIV1NU

So, the triton controller on the PC is now connected midi in/midi out through the Mac to the Korg midi port (interface) and the Triton.  If you want to control the PC and see the windows desktop on the Mac use Microsoft remote desktop on the Mac too.  Get it free from the app store.

Note. For soft synth users - The IAG driver on a Mac provides internal midi routing as standard. Macs don't suffer the problems of routing internal midi that Windows does which requires third party software. For internal PC midi routing I recommend Loopbe or LoopMidi free versions available.  For internal PC audio routing from VST's audio I recommend VoiceMeeter by vb-audio.com a free driver.

# PART 2 – THE SYNTHS

## BLUE SYNTH 3 – PHASE MODULATED SYNTHESIZER

A dedicated stand-alone Phase Modulated synth. The free blue3.exe file will be automatically installed in the installation directory. Click on the 'Blue Synth' menu item in the 'Synths' menu to open it from within the software.  NB. Clicking twice will open another instance which is allowed. A free VST version is available.



The top menu bar.
1.  Midi in - allows the selection of all the available midi inputs
2.  Midi out - allows the selection of all the available midi outputs including Microsoft GS wavetable synth often found on PC sound cards.  Make sure midi in is different to midi out otherwise you will get a midi feedback loop.
3.  Audio - allows the choice of ASIO or WDM sound drivers
4.  Zoom on the executable version changes the size of the synth on the screen.

The Blue Synth is a touch sensitive, two oscillator phase modulation virtual synthesizer designed to provide a useful audio source for the

playing or recording. It can produce lush pads or powerful leads. It can run as a standalone application or run with the software.

There are two oscillators to create the carrier waves which can both be phase modulated by a sine wave. The polyphony can be adjusted between 1 and 128 notes. You can choose the carrier waveform and apply an attack, decay, sustain and release envelope whose amount can be adjusted. The Modulator knobs control the detuning of the carrier from the modulator and the large knob the amount of modulation, Oscillator 2 can be detuned. The output can be fed through two filter banks with cutoff, resonance and track as well as ADSRs' affecting the filters. There is a ping pong delay and reverb. Programs can be saved. The built in Oscilliscope allows the user to view the wave forms and ensure the signal is not clipped. If it is you will get distortion.  To stop this just reduce the 'amount' knobs of the two ADSRs on the left side.

There are 10 factory sounds preloaded in the synth courtesy of Yoa out of the 20 available program slots in each program bank. Programs/banks can be saved as text files.

Please set midi and audio preferences (direct sound or ASIO) in synth menu before you use it.

All I ask is for feedback and ideas for additions or modifications. Also additional programs/banks welcome. I will host on my site.

PC Specs. Windows 7 to 10 - Laptop or PC - ideally >2gb ram and >2ghz processor. Should run on a netbook depending on specs. Also a mac running crossover.

**Main features**
1. Touch sensitive.
2. Oscillator 1 and 2 have a choice of waveforms. Sine, square, Sawtooth, triangle and noise. 1 to 128 note polyphony.
3. Osc 2 Pitch – adjust by up to +- 5 octaves, semitone and fine. Slightly detuning and enriches the sound.
4. 2 Envelopes per oscillator control volume and cut-off frequency
5. Filter – cut-off and resonance – filter type selectable.
5b.  Polyphony 1 to 128 notes.

6. 88 note on-screen keyboard activated by mouse or use PC keyboard keys or even better your own external touch sensitive midi keyboard. Full 128 midi notes accessible.

7. A stereo ping pong delay and reverb enriches the sound.

8. See fractal sequencer which can be used with synth and midi yoke or loopbe1 freeware to connect.

Program/bank load and save.

9. There are 20 factory sounds preloaded in the synth courtesy of Yoa (see link below) out of the 40 available program slots in each program bank. Programs/banks can be saved/loaded as text files.

10. In standalone set midi in & midi out/audio/zoom feature at top of window.

For more information email me at stuartpryer@gmail.com

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*Special thanks to Yoa, who helped with creating the presets and demo songs, as well as beta testing.*

# VIOLET SYNTH 2 - FM VIRTUAL SYNTHESIZER

This can be purchased from my website



**Violet Synth**  is a three oscillator frequency modulated
virtual  synthesizer. Version 2 has an inbuilt oscilloscope, a master volume
control and responds to touch sensitive MIDI keyboards. The harder you
strike the key the louder the note.. It can produce lush pads or powerful
leads.  It is available either as a standalone application or as VSTi for
using in a host application such as Sonar, Cubase, Cantibile, Ambleton etc.
Note. Cantibile Lite is free and has great randomising functions.

There are three oscillators to create the carrier waves which can be
frequency modulated by a sine wave, sawtooth wave, triangle wave
etc.  You can choose the carrier waveform and apply an attack, decay,
sustain and release envelope whose amount can be adjusted. The three
Fine knobs and drop down arrows under the modulator section control the
frequency modulation frequency, You can vary the modulation/carrier
ratios. A one octave difference means the carrier is half or twice the
modulator frequency which will produce tonal notes with side bands as
integer ratios of the carrier frequency. Other ratios will produce atonal

notes.  . Oscillator 2 and 3 can be detuned.  The output is fed through three filter banks with cutoff, resonance and track as well as ADSRs' affecting the filters.

There are further effects such as reverb, chorus, ping pong delay and a low frequency - frequency modulation section (vibrato).

Programs can be saved.  Programs/banks can be saved as text files or as fxp/fxb files using the host program for vsti or in the .exe version.  Please set midi and audio preferences in standalone version first.  In the VSTi the host settings fixes these parameters.

Finally, there is a recorder section so the MIDI generated whilst you play can be stored and replayed.

I appreciate feedback and ideas for additions or modifications.  Also additional programs/banks welcome.  I will host on my site.  PC Specs.  Windows 7 to 10 - Laptop or PC - ideally > 2gb ram and > 2ghz processor.  May run on a netbook depending on specs.

**Main features**
1. Click on red LED to clear audio – panic button
2. Master Volume
3. Oscilliscope – Used to view waveforms and check audio does not clip.  If audio clips reduce the first ADSR amount value. FM synths produce wide dynamic range signals.
4. Velocity sensitive to incoming MIDI data.
5. Oscillator 1, 2 and 3 have a choice of waveforms.  Sine, square, Sawtooth, triangle and noise.
6. Osc 2/3 Pitch – adjust by up to +- 5 octaves, semitone and fine.  Slightly detuning richens sound.
7. Carrier/modulator ratio can be adjusted from r = 32 to r = 1/32
8. Adjust polyphony from 1 to 128 notes
9. Two Envelopes per oscillator control volume and cut-off frequency
10. Filter – cut-off and resonance – filter type selectable.  Polyphony 1 to 128 notes.
11. 88 note on-screen keyboard activated by mouse or use PC keyboard keys or even better your own external velocity sensitive midi keyboard.  Full 128 midi notes accessible.

12. A stereo ping pong delay enriches the sound.

13. Stereo reverb

14. Stereo chorus

15. The fractal sequencer can be used with synth and midi yoke freeware or LoopBe1 to connect using MIDI.

16. Program/bank load and save.

17. There are 40 available program slots in each program bank. Programs/banks can be saved/loaded as text files or as fxp/fxb files using the host program or menu in standalone version. Midi enabled

18. In standalone set midi/audio/zoom feature at top of window. Direct Sound and ASIO output selectable.

19. In VSTi - host (Sonar, Cantabile, Cubase, Cantibil, Ambleton etc.) controls the parameters above.

20. Multiple instances of synth can be run.

21. There is a built in MIDI recorder.

22. For VSTi place .dll in your normal virtual instrument folder.

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## RED SYNTH – SUBTRACTIVE SYNTH

can be purchased from my website



**Red Synth** is a three oscillator subtractive virtual synthesizer. It has an inbuilt oscilloscope, a master volume control and responds to touch sensitive MIDI keyboards. The harder you strike the key the louder the note. It can produce lush pads or powerful leads. It is available either as a standalone application or as VSTi for using in a host application such as Sonar, Cubase, Cantibile, Ambleton etc. Note. Cantibile Lite is free and has great randomising functions.

There are three oscillators to create the tones. Sine, Sawtooth,Square, Triangel and Noise. Oscillator 2 and 3 can be detuned. The output is fed through three filter banks with cutoff, resonance and track as well as ADSRs' affecting the filters.

There are further effects such as reverb, chorus, ping pong delay and a low frequency - frequency modulation section (vibrato).

Programs can be saved. Programs/banks can be saved as text files or as fxp/fxb files using the host program for vsti or in the .exe version.

Please set midi and audio preferences in standalone version first.  In the VSTi the host settings fixes these parameters.

Finally, there is a recorder section so the MIDI generated whilst you play can be stored and replayed.

I appreciate feedback and ideas for additions or modifications.  Also additional programs/banks welcome.  I will host on my site.  PC Specs. Windows 7 to 10 - Laptop or PC - ideally > 2gb ram and > 2ghz processor. May run on a netbook depending on specs.

## Main features

23. Click on red LED to clear audio – panic button
24. Master Volume
25. Oscilliscope – Used to view waveforms and check audio does not clip. If audio clips reduce the first ADSR amount value. FM synths produce wide dynamic range signals.
26. Velocity sensitive to incoming MIDI data.
27. Oscillator 1, 2 and 3 have a choice of waveforms.  Sine, square, Sawtooth, triangle and noise.
28. Osc 2/3 Pitch – adjust by up to +- 5 octaves, semitone and fine. Slightly detuning richens sound.
29. Adjust polyphony from 1 to 128 notes
30. Two Envelopes per oscillator control volume and cut-off frequency
31. Filter – cut-off and resonance – filter type selectable.  Polyphony 1 to 128 notes.
32. 88 note on-screen keyboard activated by mouse or use PC keyboard keys or even better your own external velocity sensitive midi keyboard.  Full 128 midi notes accessible.
33. A stereo ping pong delay enriches the sound.
34. Stereo reverb
35. Stereo chorus
36. The fractal sequencer can be used with synth and midi yoke freeware or LoopBe1 to connect using MIDI.
37. Program/bank load and save.

38. There are 40 available program slots in each program bank. Programs/banks can be saved/loaded as text files or as fxp/fxb files using the host program or menu in standalone version. Midi enabled

39. In standalone set midi/audio/zoom feature at top of window. Direct Sound and ASIO output selectable.

40. In VSTi - host (Sonar, Cantabile, Cubase, Cantibil, Ambleton etc.) controls the parameters above.

41. Multiple instances of synth can be run.

42. There is a built in MIDI recorder.

43. For VSTi place .dll in your normal virtual instrument folder.

## YELLOW SYNTH – ADDITIVE SYNTH

can be purchased from my website



**Yellow Synth**  is a three oscillator additive virtual  synthesizer. It has an inbuilt oscilloscope, a master volume control and responds to touch sensitive MIDI keyboards. The harder you strike the key the louder the note. It can produce lush pads or powerful leads.  It is available either as a standalone application or as VSTi for using in a host application such as Sonar, Cubase, Cantibile, Ambleton etc.  Note. Cantibile Lite is free and has great randomising functions.

There are three oscillators to create the tones. . The user can use the mouse to change the mix of the harmonics on the blue graphs. Oscillator 2 and 3 can be detuned.  The output is fed through three filter banks with cutoff, resonance and track as well as ADSRs' affecting the filters.

There are further effects such as reverb, chorus, ping pong delay and a low frequency - frequency modulation section (vibrato).

Programs can be saved.  Programs/banks can be saved as text files or as fxp/fxb files using the host program for vsti or in the .exe version. Please set midi and audio preferences in standalone version first.  In the VSTi the host settings fixes these parameters.

Finally, there is a recorder section so the MIDI generated whilst you play can be stored and replayed.

I appreciate feedback and ideas for additions or modifications.  Also additional programs/banks welcome.  I will host on my site.  PC Specs. Windows 7 to 10 - Laptop or PC - ideally > 2gb ram and > 2ghz processor. May run on a netbook depending on specs.

**Main features**
1.  Click on red LED to clear audio – panic button
2.  Master Volume
3.  Oscilliscope – Used to view waveforms and check audio does not clip. If audio clips reduce the first ADSR amount value. FM synths produce wide dynamic range signals.
4.  Velocity sensitive to incoming MIDI data.
5.  Oscillator 1, 2 and 3 are harmonic generators.  User can pick harmonic content.  Settings can be saved per oscillator and reloaded.
6.  Osc 2/3 Pitch – adjust by up to +- 5 octaves, semitone and fine. Slightly detuning richens sound.
7.  Adjust polyphony from 1 to 128 notes
8.  Two Envelopes per oscillator control volume and cut-off frequency
9.  Filter – cut-off and resonance – filter type selectable.  Polyphony 1 to 128 notes.
10. 88 note on-screen keyboard activated by mouse or use PC keyboard keys or even better your own external velocity sensitive midi keyboard.  Full 128 midi notes accessible.
11. A stereo ping pong delay enriches the sound.
12. Stereo reverb
13. Stereo chorus
14. The fractal sequencer can be used with synth and midi yoke freeware or LoopBe1 to connect using MIDI.
15. Program/bank load and save.

16. There are 40 available program slots in each program bank. Programs/banks can be saved/loaded as text files or as fxp/fxb files using the host program or menu in standalone version. Midi enabled

17. In standalone set midi/audio/zoom feature at top of window. Direct Sound and ASIO output selectable.

18. In VSTi - host (Sonar, Cantabile, Cubase, Cantibil, Ambleton etc.) controls the parameters above.

19. Multiple instances of synth can be run.

20. There is a built in MIDI recorder.

21. For VSTi place .dll in your normal virtual instrument folder.

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# SH-1000 VIRTUAL SYNTHESIZER VER 2.1

can be purchased from my website
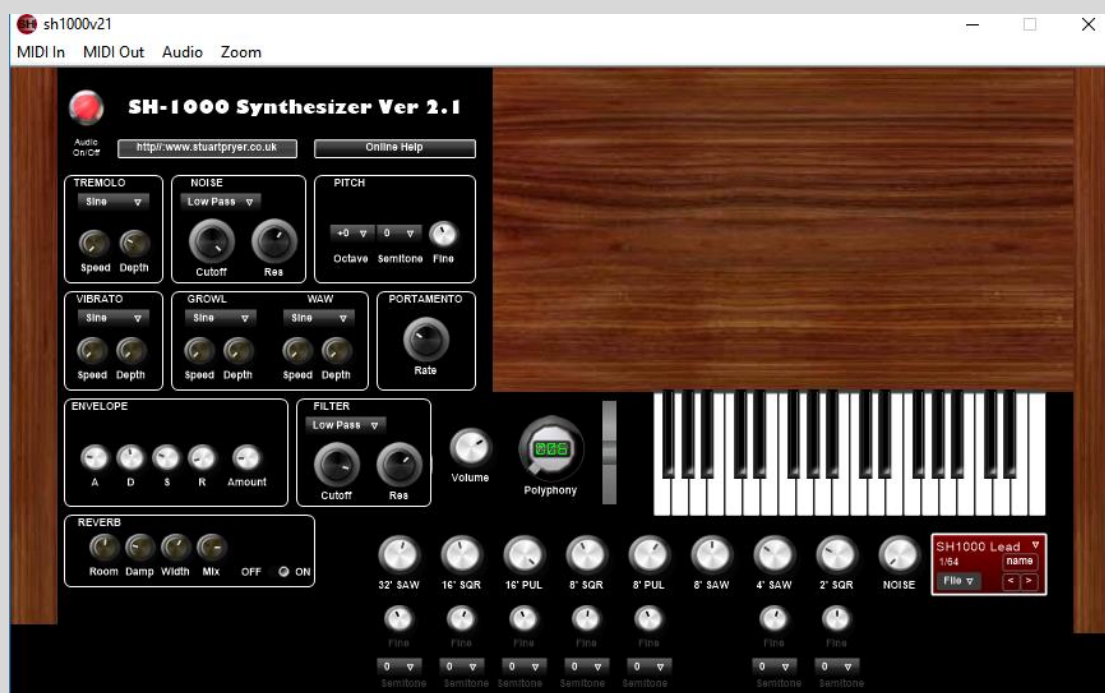


The SH-1000 is an emulation of the Roland SH-1000 synthesizer first released in 1973 and which was Rolands first synth.  Its successor was the SH-2000 but that was designed to be more of a preset instrument and had far less flexibility.  The SH-1000 was used by Blondie, The Band, Jethrow Tull, The Human League and Eddie Johnson (Roxy Music) as well as many others. This was also the first synth I owned.

It is available either as a VSTi for use within a host such as Sonar, Cantabile, Cubase, Ambleton etc. or as a stand alone application.

PC Specs. Windows 7 to 10 - Laptop or PC - ideally >2gb ram and >2ghz processor.  May run on a netbook depending on specs and polyphony and ADSR release time chosen.

**Main features of full version**

1.  Click on red LED to clear audio – panic button
2.  Tremolo – cyclic variation in volume – choose waveform, depth and speed

3. Noise – adjust cut off frequency and resonance of noise generator. Originally just white/pink option.

4. Pitch – adjust by up to +- 5 octaves, semitone and fine. Original just had option to raise or lower by 1 octave.

5. Vibrato – cyclic variation in frequency. Choose waveform depth and speed. Original had only 2 waveforms.

6. Growl – phase modulation. Waw cut off frequency modulation

7. Portamento – when polyphony set to 1 notes glide in frequency. When polyphony set higher say 2. When third note played first note glides to it. Original SH-1000 was monophonic.

8. Envelope controls volume and cut-off frequency

9. Filter – cut-off and resonance – filter type selectable. Original was just low pass.

10. Volume controls output amp

11. Polyphony 1 to 128 notes. Original monophonic

12. Waveform mixer – adjusts each waveform volume. Original on/off only.

13. Ability to detune oscillators to produce a richer sound.

14. Pitch bend wheel. Original glide button

15. 3 octave on-screen keyboard activated by mouse or use PC keyboard keys or even better your own external midi keyboard. Full 128 midi notes accessible. Original limited to 3 octaves with pitch raise/lower by 1 octave.

16. Stereo Reverb. Original just had hold note until next note played.

17. See Fractal Sequencer for advanced sequencer features which can be used with SH-1000 and midi yoke freeware or LoopBe to connect. Original had simple Random Note generator.

18. Program/bank load and save. There are 64 available program slots in each program bank. Programs/banks can be saved/loaded as text files or as fxp/fxb files using the host program or menu in standalone version. Original had no option to save or load settings.

19. Midi enabled – Original no midi.

20. In standalone set midi/audio/zoom feature at top of window.

21. In VSTi - host (Sonar, Cubase, Cantibile, Ambleton etc.) controls the parameters above.

22. In VSTi multiple instances of synth can be run.

23. Ver 2 has updated routines for Pulse Waveform reducing CPU load. If the load is still too high reduce release time of the ADSR envelope to the 9 o'clock position and/or Polyphony.  I run it on a netbook!
24. A VSTi is available. Place sh1000vxx.dll in your normal virtual instrument folder.

*Special thanks to Yoa, who helped with creating the demo song, as well as beta testing.*

# MIDI RECORDER & ARPEGIATOR & MIDI FILE PLAYER



The MIDI Recorder is included in the software and does three things

- You can record any midi signal coming into the recorder and play it back to its midi output.
- You can play standard MIDI files
- You can add an arpeggiator to any incoming MIDI note and send to its MIDI output. The arpeggio pattern can be designed by the user or a random patter can be generated. The speed and number of steps can be varied.

# APPENDICES

# APPENDIX 1 - AN INTRODUCTION TO MIDI

MIDI stands for Musical Instrument Digital Interface and allows externally generated signals to control an instrument.  For instance a synth to control another synth, or a computer to control a synth. Not only can MIDI control what notes sound and the instrument played using short MIDI messages, but it can control most of the controls on a fully MIDI enabled instrument using system exclusive Sysex messages; long MIDI messages.

MIDI has been pivotal in the development of electronic music.  Originally developed in 1983, one of the founders was Roland and another was the late Dave Smith of Sequential Circuits, The standard is largely unchanged and has enabled computers to fully integrate with synthesizers.  MIDI enables one instrument to control another or a computer to control, or be controlled, by an electronic instrument.  It's the basis of synth and sequencer communications

The first sequencer program I wrote was for the Korg MS20 in 1980.  Without MIDI I had to use digital to analog converters to send the monophonic control voltage CV instructions to the synth.  The synth then sent back CVs' which had to be converted to a digital value for the computer, I had to build my own circuit boards. It was not an easy task but something MIDI handles with ease.

The latest synthesizers or sound modules are called software or soft synths.  See the Bluesynth 3 included with this software. These synths only exist as a program running on a computer and this approach is immensely powerful but the sound quality depends on the quality of the VST and the sound card in the PC.  They have not replaced hard wired synths yet, but may do so in the future.

For more information see the MIDI association website.

https://www.midi.org/

Virtually all midi instruments have a General MIDI instrument list of programs which can be called upon. 128 pre programmed instrument sounds.

General MIDI Instrument list

**Piano:**
1 Acoustic Grand Piano
2 Bright Acoustic Piano
3 Electric Grand Piano
4 Honky-tonk Piano
5 Electric Piano 1
6 Electric Piano 2
7 Harpsichord
8 Clavinet

**Chromatic Percussion:**
9 Celesta
10 Glockenspiel
11 Music Box
12 Vibraphone
13 Marimba
14 Xylophone
15 Tubular Bells
16 Dulcimer

**Organ:**
17 Drawbar Organ
18 Percussive Organ
19 Rock Organ
20 Church Organ
21 Reed Organ
22 Accordion
23 Harmonica
24 Tango Accordion

**Guitar:**
25 Acoustic Guitar (nylon)
26 Acoustic Guitar (steel)
27 Electric Guitar (jazz)
28 Electric Guitar (clean)

**Strings:**
41 Violin
42 Viola
43 Cello
44 Contrabass
45 Tremolo Strings
46 Pizzicato Strings
47 Orchestral Harp
48 Timpani

**Strings (continued):**
49 String Ensemble 1
50 String Ensemble 2
51 Synth Strings 1
52 Synth Strings 2
53 Choir Aahs
54 Voice Oohs
55 Synth Voice
56 Orchestra Hit

**Brass:**
57 Trumpet
58 Trombone
59 Tuba
60 Muted Trumpet
61 French Horn
62 Brass Section
63 Synth Brass 1
64 Synth Brass 2

**Reed:**
65 Soprano Sax
66 Alto Sax
67 Tenor Sax
68 Baritone Sax
69 Oboe
70 English Horn

**Synth Pad:**
89 Pad 1 (new age)
90 Pad 2 (warm)
91 Pad 3 (polysynth)
92 Pad 4 (choir)
93 Pad 5 (bowed)
94 Pad 6 (metallic)
95 Pad 7 (halo)
96 Pad 8 (sweep)

**Synth Effects:**
97 FX 1 (rain)
98 FX 2 (soundtrack)
99 FX 3 (crystal)
100 FX 4 (atmosphere)
101 FX 5 (brightness)
102 FX 6 (goblins)
103 FX 7 (echoes)
104 FX 8 (sci-fi)

**Ethnic:**
105 Sitar
106 Banjo
107 Shamisen
108 Koto
109 Kalimba
110 Bag pipe
111 Fiddle
112 Shanai

**Percussive:**
113 Tinkle Bell
114 Agogo
115 Steel Drums
116 Woodblock
117 Taiko Drum
118 Melodic Tom
119 Synth Drum

29 Electric Guitar (muted)
30 Overdriven Guitar
31 Distortion Guitar
32 Guitar harmonics

**Bass:**
33 Acoustic Bass
34 Electric Bass (finger)
35 Electric Bass (pick)
36 Fretless Bass
37 Slap Bass 1
38 Slap Bass 2
39 Synth Bass 1
40 Synth Bass 2

71 Bassoon
72 Clarinet

**Pipe:**
73 Piccolo
74 Flute
75 Recorder
76 Pan Flute
77 Blown Bottle
78 Shakuhachi
79 Whistle
80 Ocarina

**Synth Lead:**
81 Lead 1 (square)
82 Lead 2 (sawtooth)
83 Lead 3 (calliope)
84 Lead 4 (chiff)
85 Lead 5 (charang)
86 Lead 6 (voice)
87 Lead 7 (fifths)
88 Lead 8 (bass + lead)

**Sound effects:**
120 Reverse Cymbal
121 Guitar Fret Noise
122 Breath Noise
123 Seashore
124 Bird Tweet
125 Telephone Ring
126 Helicopter
127 Applause
128 Gunshot

# <u>APPENDIX 2 - RECOMMENDED ACCESSORIES</u>

1. Good headphones or monitor speakers. If you play to an audience either the house PA or good quality keyboard amps/speakers. I use Sennheiser enclosed headphones and Yamaha active monitors and an active Sub Woofer.
2. A good quality Headphone amp.  The result is smoother and warmer sound. And the ability to drive high impedance headphones.
3. Audio interface
4. Midi interface
5. Use XLR connections and leads if possible.
6. A very sturdy stand. A four leg table stand.  I use the latter, as it folds, is compact and very, very strong.
7. triple pedal unit
8. expression pedal for organ.
9. Surge protector – to protect your instrument
10. Dust cover - ditto
11. Mac or PC i5 or higher ideally with an SSD and >8gb ram for virtual instruments – particularly synths and recording or playing live.
12. A good DAW. For Mac I recommend Bitwig, Logic or Mainstage For Windows I recommend Bitwig, Cantabile 3 or Cakewalk by Bandland which is free.
13. For Virtual Instruments I recommend Native instruments – Reaktor, FM8, Absynth, Vintage Organs,Massive and Massive X. Kontakt is also a great sample based instrument. I also use my own Virtual Instruments.
14. The Korg VST collection and Wavestate are superb.

## APPENDIX 3 - A TWO KEYBOARD SETUP

I prefer using two keyboards.  The master keyboard being the RD2000 on the bottom rack and a top rack keyboard, a synth having a semi weighted action. I use a 76 note Korg Triton pro with an on-board Moss physical modelling board for internal sounds and also as a Midi controller for Virtual instruments, but it could be any Midi keyboard.  The benefit of this arrangement is that for synths I use the Triton or virtual instruments either separately or layered and get a quicker and lighter action for them.  I can also use the upper keyboard for the top manual of Organs. So in summary the upper keyboard just plays internal sounds or virtual instruments and the lower keyboard, the RD plays its internal sounds or Controls VSTs.

So to do this up I use a seperate audio interface with all the sounds being sent/received by it. The RD / Triton output either goes to the Audio interface for headphones or main L/R outputs.  This then goes to speakers. For editing / librarian functions for the Triton I use my own software (Triton Controller). For the RD I use my own editing software. Rd2000 Editor. Both with a midi interface. See my website for software.

# APPENDIX 4 – SOME RECOMMENDATIONS

1. Native Instruments produce fantastic software synths and include samplers (Kontakt), FM synth (FM8), Absynth, Wavetable (Massive and Massive X) and Reaktor where you can design your own or download other's synths – Monark is a good Mini Moog emulation.
2. The Korg Collection and Wavestate and Opsix are superb vsts.
3. If you want to use a second keyboard you can either use a hardware synth or use virtual instruments.  Its personal preference.  I like using a synth weighted midi controller keyboard such as the Korg Triton or Roland A800 Pro 61 to control the virtual instruments and keep the RD controlling its own sounds. The top keyboard can also be used as the upper manual for Organ tones.
4. For the second keyboard I would recommend another instrument and make to widen the variety of sound. I use a Korg Triton Pro 76 note workstation loaded with a MOSS modelling board.
5. For live playing of Virtual instruments I recommend Mainstage (Mac) or Cantabile (Windows)
6. For recording I recommend Bitwig, Logic (Mac). Garage band (free).
7. There is a wider choice in Windows. Bitwig, Cubase, Band Lab (Free – was Sonar), Ableton etc.

## FINALLY

My website details are [http://stuartpryer.co.uk](http://stuartpryer.co.uk) – the web site contains updates from time to time so keep checking.  It also has my e-mail address. Please contact me if you find bugs or have suggestions on how to improve the software.

## REVISION HISTORY

1.0.1   7th June 2022 – First release of MidiToolbox

1.0.2   9th June 2022 – added the ability to Save and Open midi dumps as plain text files. Fixed a bug with change Banks and programs and added ability to send just LSB for bank changes.

1.0.3   12th June 2022 Updated titles for midi check boxes on Settings form. Added ability to show all CC messages. Improved data output format in Main text box.

1.0.4   14th June 2022 Updated app so that all child forms are held within main app window. Improved formatting in bottom text box.

1.1.0   21st June 2022 Added ability to send all types of MIDI data. Also added a menu item under File to paste plain text from the windows clipboard. Added 'fractal landscape' background to main form. Image produced using my Fractal Sequencer software.

1.1.1   22nd June 2022 Filtered out MIDI active sensing 'FE' from main text box.

1.1.2   Added Tool Tips to many controls. Updated this documentation.

1.1.4   Corrected bug in midi out short messages such as change bank and program and playing very low note numbers from virtual keyboard. Improved Midi Thru routine.

# CONDITIONS OF USE

<u>License Conditions</u>

1.  The license licensee is entitled to install the full software on PC's belonging to them. This software is donation ware.  Please support its development. Donations can be made at PayPal using my email address stuartpryer@gmail.com

2.  The licensee shall not give the software to other people, resell it, distribute it, post it on a web site or attempt to decompile it or reverse engineer it.

3.  The license is non-transferable.

4.  The licensee will be entitled to free updates for future releases of the software. These updates will be posted on the author's web site and the licensee may download them when they are ready.

5.  The licensee will receive reasonable support from the author to assist them in operating the software.

6.  Licensee's may request new features.  The author may implement them if they are feasible and the code does not take too long to write.

7.  The licensee is solely responsible for the consequences of use of the software and any damage to equipment or loss of data shall remain their responsibility.


If you accept the license terms then you may install the software. If you need any help at all please e-mail me.

Thank you once again.

*Stuart Pryer*

Cornwall
UK
stuartpryer@gmail.com

## SO THAT'S IT?

If there are features you would like to add, let me know and if it is possible, I will add them. Feedback and a wish list for additional functions are always welcome, together with suggestions for improving the documentation!

Have Fun ☺ !!!!

*Stuart*

*Copyright 2022*

[*Return to Index*](#)

## LINKS TO SOME OTHER SITES

1. For software updates, Triton Controller, RD2000 editor, Fractal Sequencer and virtual synths visit my site
2. Irish Acts – Korg Forums.
3. Roland Axial Website for more sounds  www.axial.roland.com
4. Roland Clan Forums  www.forums.rolandclan.com
5. For an alternative Midi utility try Midi Ox at http://www.midiox.com/
6. For internal PC midi routing I recommend Midi Yoke or LoopBe1 http://www.nerds.de which is also excellent.
7. KVR Forum – a great place for electronic music information http://www.kvraudio.com/
8. Roland Corporation, http://www.Roland.com
9. Native Instruments – Producers of a fantastic suite of virtual instruments and effects.  Special thanks to Stephen Parker General Manager, UK. http://nativeinstruments.com
10. For fantastic synths and virtual synths – http://www.korg.com
11. Cantilble 3 VST host by topten software.  A great windows equivalent to Mainstage.  www.cantibilesoftware.com
12. rtpMidi for Mac/PC connection.
13. www.midi.org

## RECOMMENDED BOOKS

MIDI for the professional – Paul Leherman

The MIDI Manual – David Miles Huber

Vintage Synthesizers – Mark Vail

The Synthesizer – Mark Vail

Your instrument manuals !

BACK COVER

Fractal image using Triangular Inequality Average

Created using my Fractal Sequencer Software