

ROLAND RD2000 EDITOR

DOCUMENTATION

Software Version 3.9.5

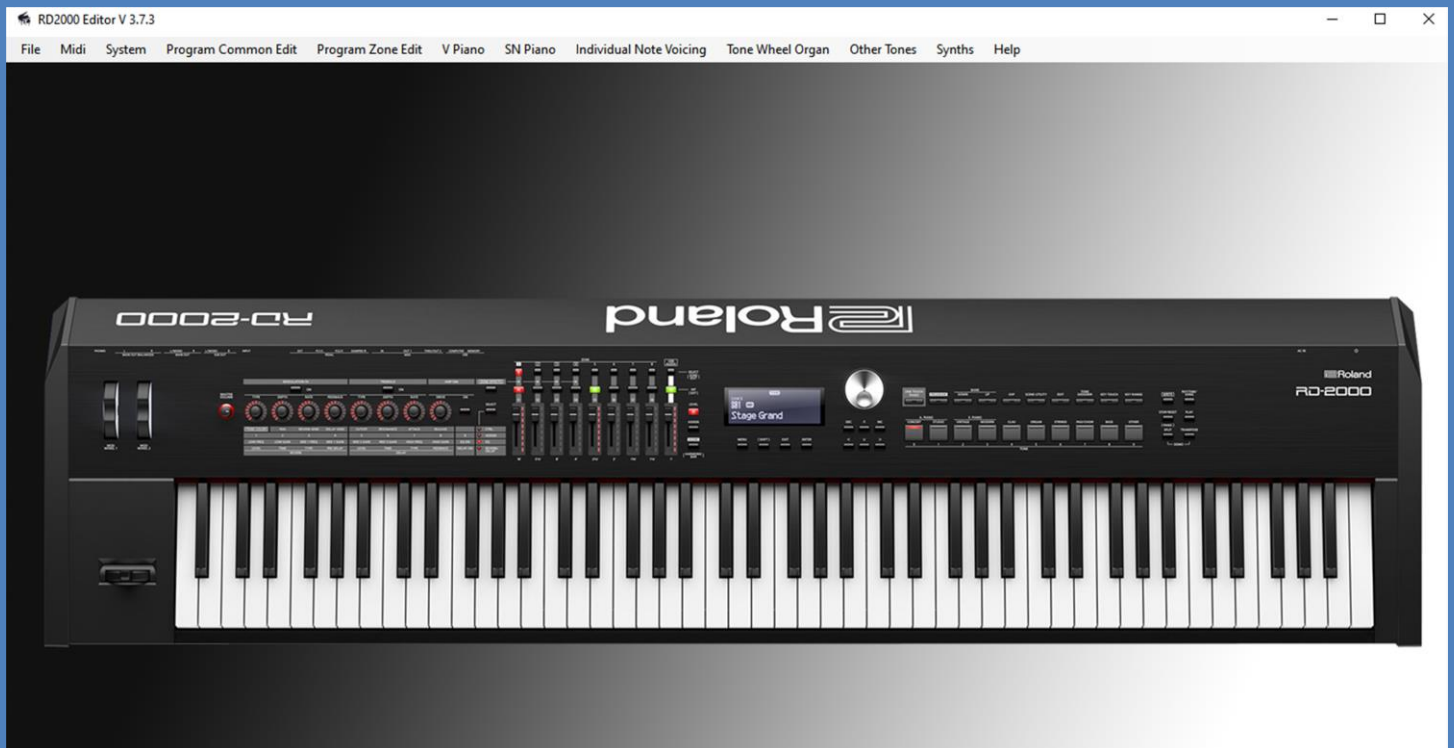
7th April 2024

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See also Fractal Sequencer, Korg Triton Controller and Virtual Instruments

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WELCOME

The Roland RD 2000 is one on the world's best stage pianos. It combines superb modelling and sampling technology with a marvellous action, beautiful build quality and it's also a great Midi controller. Thank you, Roland Corporation.

The RD has a small screen, but sometimes users want to see the controls without scrolling through lots of menus. I wrote this software which uses the far larger screens of computers to make life a bit easier.

I would like to thank Gus at Roland Clan Forums for his tireless and thorough testing of the software. He has done a great job. And DesertBoat for his help with the deciphering of the Tremolo and some of the Mod fx sections.

Finally, thanks to Roland Corporation Customer Support on the West Coast in answering questions in a helpful and timely way. Particularly, Alita, Dan and Alberto.

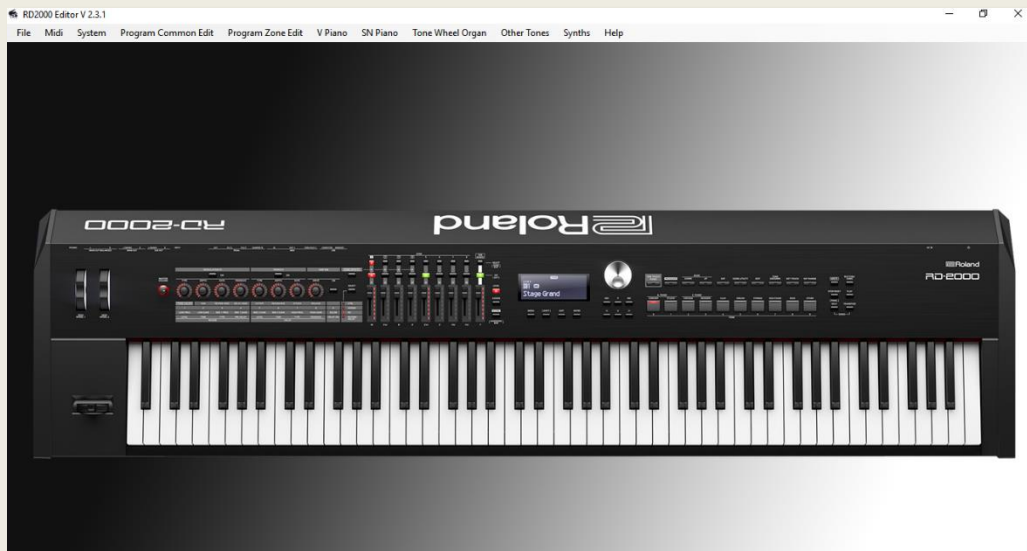
Have fun.

Stuart Pryer

Cornwall. UK

RD2000 EDITOR

This software can be downloaded from my website for free. If you like the full version and want to support its development you can use [Paypal.com](https://www.paypal.com) to make a donation. My email address is stuartpryer@gmail.com. Remember to download the latest docs from my website and overwrite the rd2000.pdf file in the installation directory.



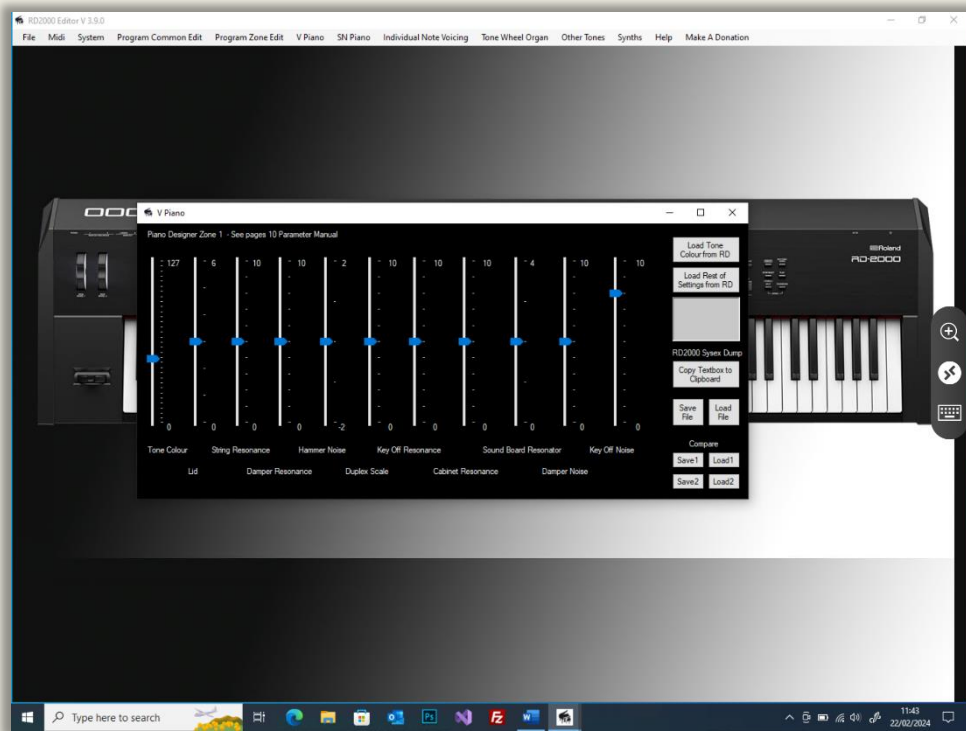
RD2000 Editor running on a Windows PC

Midi can be sent and received between a pc running this software and a Mac - if say the Mac is your studio computer - To do this use RPTMidi which uses a wireless Midi protocol. You can use Microsoft remote desktop on a Mac, iPhone, iPad or Android phone or tablet to remotely control the software.

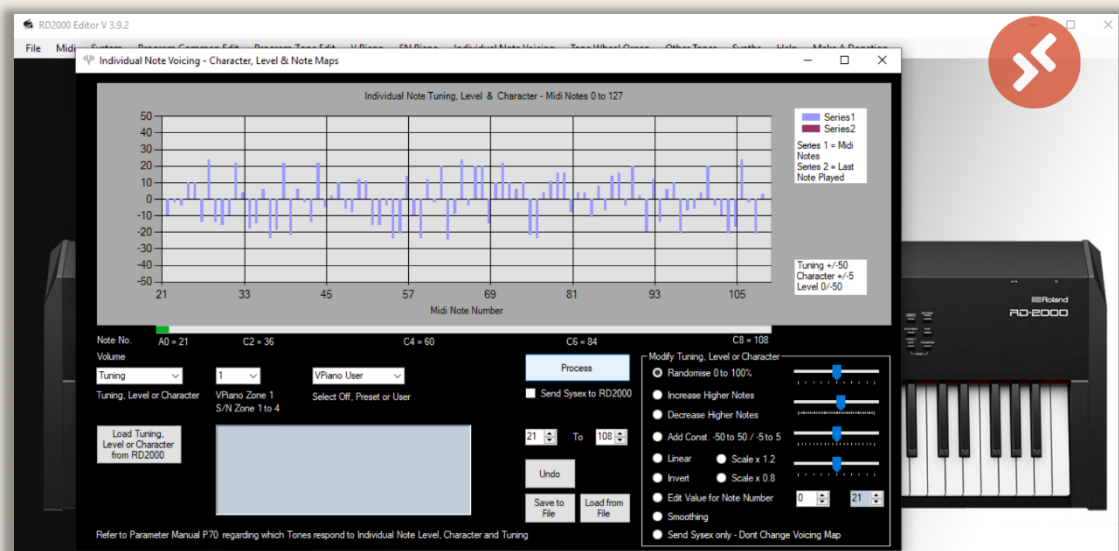


Running on a Mac

Using Code Weavers Crossover app. It should also run on Linux and Android. Or you can control a PC running Microsoft Desktop.



The RD2000 Editor controlled from an iPad using Microsoft Remote Desktop. You can also use iPhones and Android or Linux devices running the Remote Desktop app. The VPiano editor form is loaded.



Here its running via an iPhone using Remote Desktop. The Individual note voicing form is loaded and ready to tune the RD2000.

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Thanks to Gus for all of his exhaustive testing 😊



VERSION 3

INTRODUCTION TO THE RD2000 EDITOR

The Software is a powerful editor which can change settings on the RD2000 using MIDI system exclusive messages - Sysex - and Control Change CC messages. The RD 2000 has a small screen and finding settings is not always easy, with many layers of controls and tabs. This software uses the large display of PCs' and Macs to lay out the controls in a more friendly way. Version 3 now includes the German V-piano Expansion database with 17 new V-piano tones. You need to purchase the expansion from the Roland Cloud to use these new tones.

CONDITIONS OF USE

License Conditions for RD2000 Software

1. **Please support this software's development. Donations for the software can be made at PayPal [Donate \(paypal.com\)](https://www.paypal.com/donate). Please Pay what you think it is worth. 😊** You can also get a link to my Paypal donation page in the Help Menu.
2. The licensee is entitled to install the full software on PC's belonging to them.
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. At the moment the licensee will be entitled to free updates for future releases of the software. These updates will be available on my website.
5. The licensee may 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.

I would appreciate any feedback on layout, features, bugs, documentation, reviews, and tips' on using the software or the RD2000 or ideas on how to make it better.

If you need any help at all please e-mail me.

Thank you once again.

Stuart Pryer

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INSTALLING ON A PC - WINDOWS

NB. To install on a Windows computer, log on with administrator rights and run the installer RD2000setup.msi. The associated setup.exe file ensures the .net framework is updated if needed and the installation is properly managed.

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 (4.8 or higher) and the software installation is properly managed. Note. The synths and documentation will be installed in the programme directory. C:\program files\rd2000setup for 32 bit operating systems or c:\program files (x86)\rd2000setup for 64 bit OS pcs.

NB. Software updates will normally consist of just an updated MSI file and setup.exe. The previous version must be uninstalled first.

The PC should be running preferably Windows 10 or 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. Min Spec. Intel Atom processor, 2GB RAM screen resolution 1024x600. The software takes up about 38Mb of disk space. It may run in Windows 7 with a few minor limitations.

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 but will run on 64 bit systems.

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

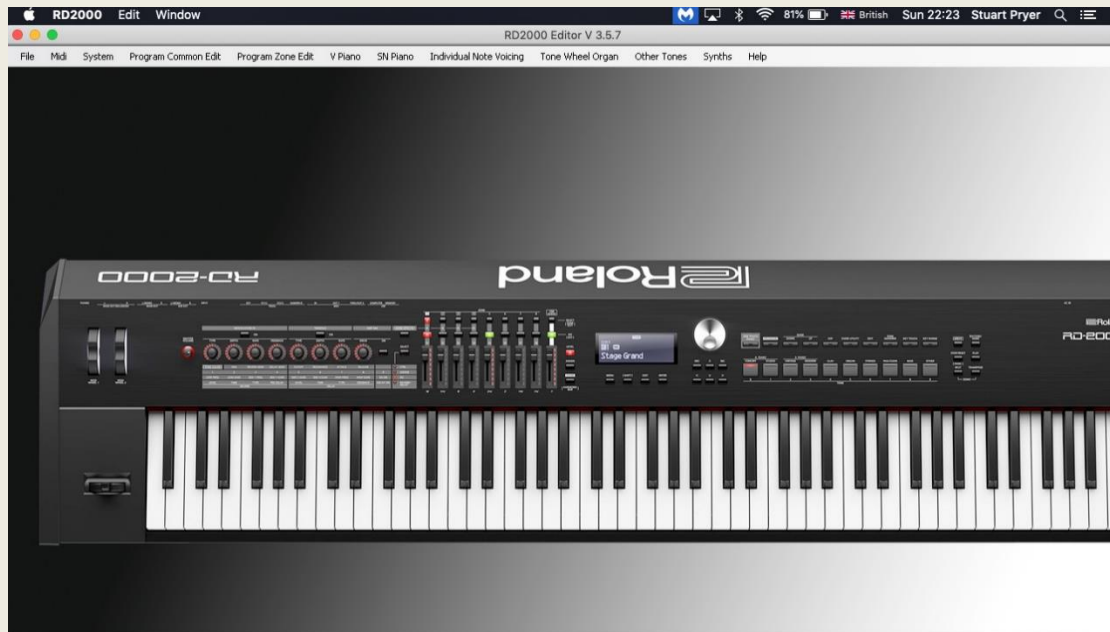
Other software

For internal midi routing I recommend Loopbe - free version available. For internal audio routing from VST's I recommend Jack a free driver.

A great host program for Windows VSTs' is Cantabile 3 by topten software.

Also rptMidi for transferring midi between Mac and Windows computers.

INSTALLING ON A MAC - MACOS - OSX



It will run on a Mac/Macbook running MacOS Mojave or higher, using the excellent software Crossover 22.x or higher. The software is sold by <https://codeweavers.com> and is based on 'Wine'. A free 14 day trial is available on their website. This software is in the Codeweavers compatibility C4 database.

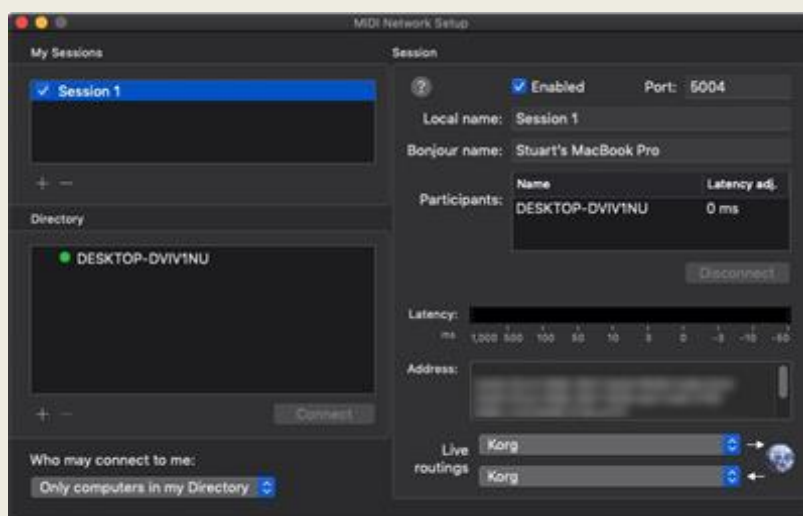
1. Install Codeweavers Crossover 22.x or higher.
2. Set up a windows 10 - 32 bit bottle.
3. Point Crossover to the RD2000.msi installer.
4. When done, click on the new Rd2000 shortcut to run the software.

Note. For soft synth users - The IAG driver on a mac provides internal midi routing as standard. Macs don't suffer the problems of recording audio or routing internal midi that Windows does which requires third party software. Mac spec. OSX Mojave or higher, i3 or higher, 4gb ram or higher, Screen resolution 1280x720 or higher.

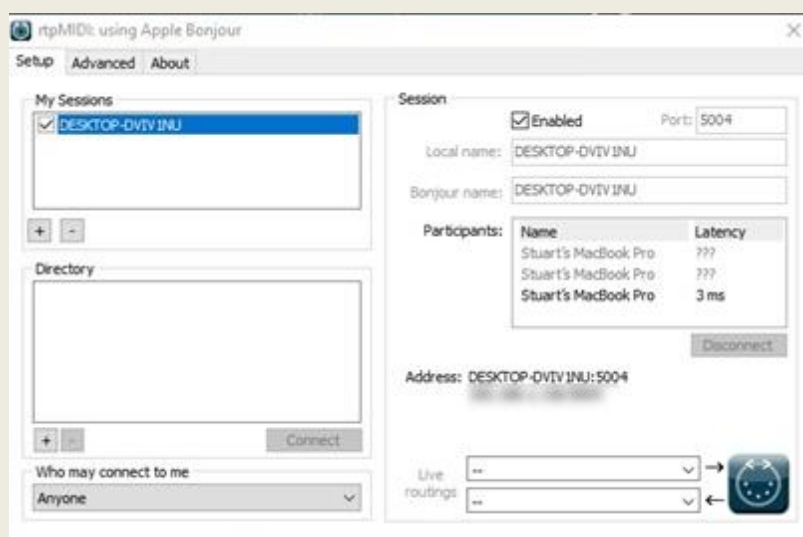
USING THE RD2000 EDITOR ON PC VIA A MAC

You can route two-way Midi data via a Mac using the free rtpMIDI program on a PC. [rtpMIDI | Tobias Erichsen \(tobias-erichsen.de\)](http://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 - a midi interface connected to the RD2000. 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 the RD2000 Editor set midi input/ output to the name of your pc desktop. In my case Desktop-DVIV1NU

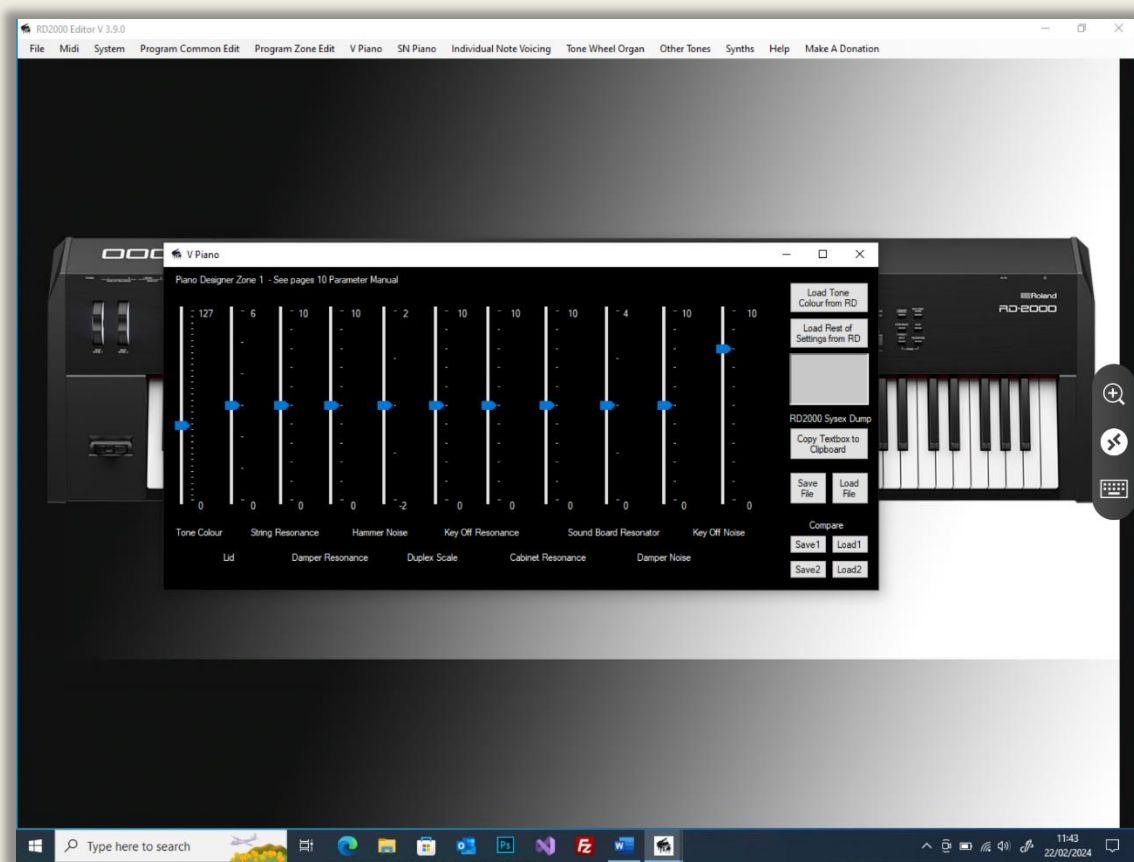
So, the RD2000 Editor on the PC is now connected midi in/midi out through the Mac to the Midi interface and the RD2000. If you want to control the PC and see the windows desktop on the Mac use Microsoft remote desktop on the Mac too. Get it free from the app store.

USING AN IPAD, IPHONE OR ANDROID DEVICE WITH THE SOFTWARE

The software can be controlled by an iPad or iPhone etc. sitting on your RD2000. This makes it very convenient to use. In fact, any phone, tablet or computer which runs Microsoft Remote Desktop - RemD for short - will work. E.g, Android devices. So now you can control the software using the touch screen of the Tablet or phone. To use this setup, download the Free app on your device - Microsoft Remote Desktop (RD) - from the App store or Play store. You can control all features of the software this way without needing to be near your PC. The PC only needs to be connected by Midi to the RD2000.

1. Open the RemD app on the handheld device. Make sure blue tooth is on both PC and the hand-held device. Both need to be on your local wireless network. On RemD you need to enter your PC's name, your login and password for the PC. to connect.
2. In the RemD app make sure you send Audio to your remote PC and not the iPad. Otherwise, the RD2000 software will not be able to access your midi ports on your PC to connected to your RD2000. It will try to find the midi ports on the hand-held device.

Below is a screenshot of my iPad screen. The three RemD icons on the right allow you to zoom in and out by 'pinching', access to the RD home screen and onscreen qwerty keyboard. Instead of a mouse you use the hand-held devices touch screen. The whole windows 10 desktop is visible.



As you can see the image quality is excellent. You have access to all of the RD2000 software's controls and forms.



You can zoom into a form easily using your fingers on a touch screen. Here is the VPiano editor form filling the iPad screen. You now have a touch screen for the Rd2000, but much bigger than the Rd2000 screen and very responsive!

USER MANUAL

Important. This pdf help file rd2000.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' Buttons which will automatically open your browsers pdf reader and then open the file. Tool bar tips also appear for some commands,

STARTING 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 RD2000. USB hubs are not recommended unless they are powered.

Turn on the RD2000, turn on the pc and run the program. When you run the program, configure the midi device by using the '**MIDI**' 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

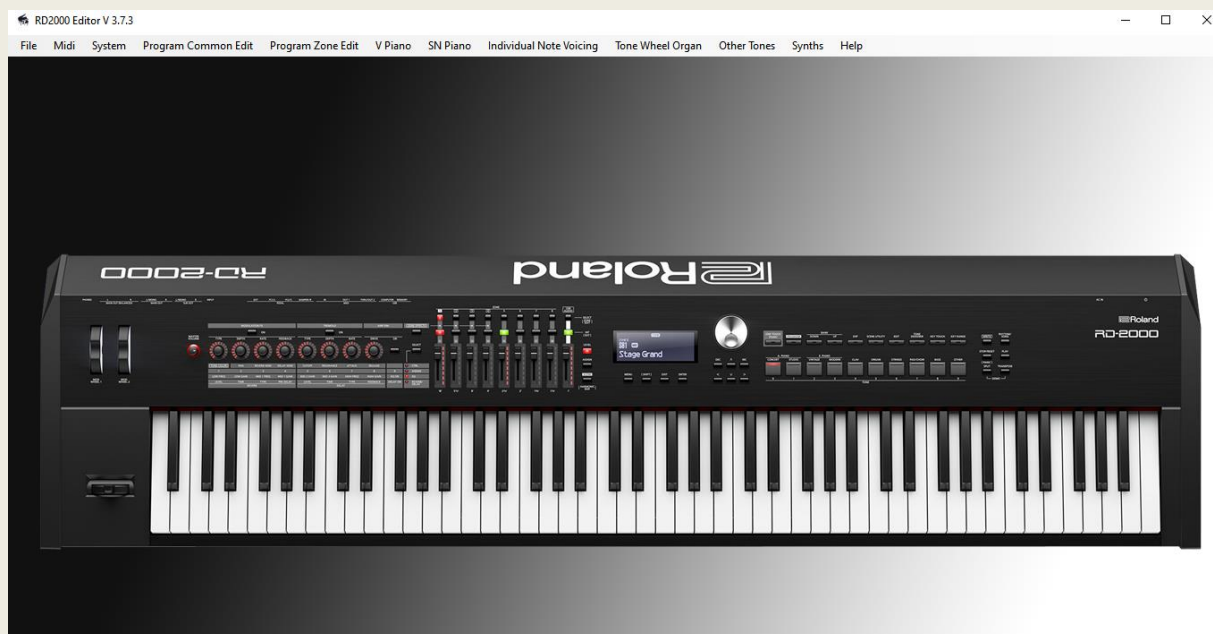
Two important points!

1. The software sends and receives Midi Channel Voice messages, Control Change CC messages and System Exclusive (Sysex) messages.
2. It can receive settings from the RD via Sysex for all settings except Modulation FX. This is due to the lack of information in the Midi implementation manual for Mod FX.
3. When a program is created by a user it is stored in temporary memory of the RD2000. If the program is changed or the RD2000 switched off the edits will be lost. There is no way I know of 'Writing' the edits using MIDI. The user must **WRITE** the program using the RD2000 **WRITE** button at the top right of the control panel. This writes to User memory which will save the edits. The RD will ask for a name, the software can send the name the user types on the program name form. But the user must select a program slot on the RD2000 or overwrite one not required, to store the saved program.



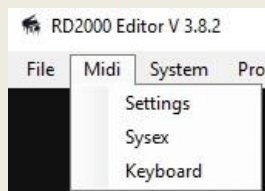
Remember. Once you have edited a sound it is still in the temporary memory of the RD2000. You have to **WRITE** it on the RD and save the program to a location in one of the program banks. If you don't it will be lost when you change RD programs or switch off.

THE RD2000 EDITOR - MAIN FORM

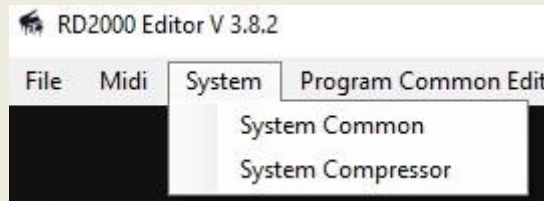


The main screen has a menu system at the top. Each menu item is described in detail later.

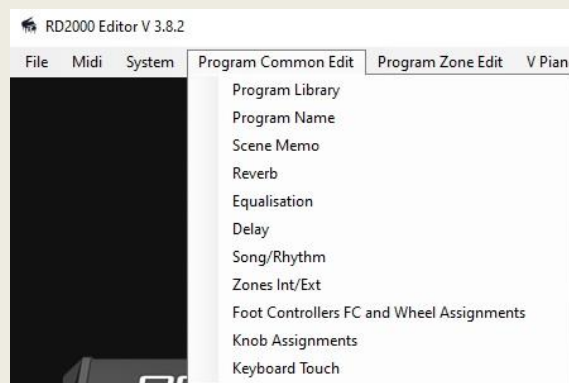
1. File /Exit- closes the midi port and application.
2. The Midi - menu allows the user to set up the midi input/output port for the software. This is used to turn on or off the midi in and out ports or if the user wants to change the midi routing. It also contains the Midi Mapper. There is also a two-octave keyboard. Note to use midi you need to have at least one midi in and one midi out connecting the RD. There is also a sysex viewer - - make sure midi thru is off. The second menu option enables sysex to be input and sent. As well as IRQ sysex dump requests from the RD2000. Finally, the third menu is an 88 note virtual keyboard.



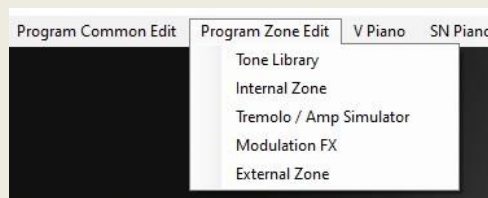
3. System - allows changes to system wide parameters of the RD2000 - system common and system compressor.



Program Common Edit - menu allows modification of the main functions such as delay etc. which are not zone specific



4. Program Zone edit - these are parameters which are zone specific.

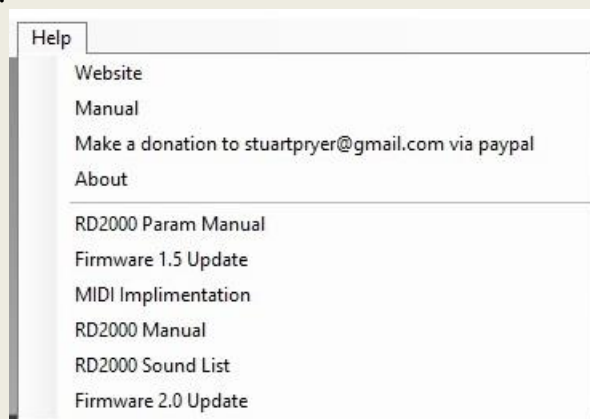


5. The V Piano - menu accesses the main control screen for the V Piano editor. V Piano only exists in Zone 1. This includes the German Piano expansion if you have purchased it from Roland Cloud - this is a lifetime license.
6. The SN Piano - menu accesses the main control screen for the Supernatural Piano editor. Select Internal Zone first which is the Zone in which the SN Piano you want to edit is loaded.
7. Individual Note Voicing - This menu allows you to edit note by note Tuning, Character and Level and also download note tuning for Vpiano, Supernatural Piano, Clav and EP tones.

8. Tone Wheel Organ - emulation of a Hammond Tone wheel organ such as C3, B3 and A100.
9. Other Tones - editor for the remaining PCM tones
10. The 'Synths' menu shows a pdf of my free Roland SH1000 synth emulation. It runs in Reaktor 6.x (Full or free Player version) as a standalone or VST/AU plugin in a DAW, Windows and Mac. The sh1000v24.ens ensemble can be found in the RD2000 editor installation directory. There is also The Blue synth 3 VST dll plugin and the stand-alone version in the installation directory plus my Midi Recorder and arpeggiator.



11. The Help button accesses my website and the RD2000.pdf help file. This is installed automatically with the software in the installation directory. Updates can be downloaded from my website and the pdf file can be overwritten. Please keep the name the same. 'RD2000.pdf'. All sliders have tooltips. Just hover the cursor over the control and the tool tip appears and shows the value. Hold Ctrl and arrow buttons for fine control. There is a link to Paypal if you can make a donation for the software. There is also quick access to the RD2000 parameter manual. Owner's manual and midi implementation manual. Finally, firmware 1.5 and 2.0 update documents. Copyright Roland Corporation. Note RD2000 Firmware Version 2 update allows the addition of a new V-Piano engine - The German Piano.



EXITING THE SOFTWARE

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 port and terminate the program. Use this rather than closing down the window with the Window's 'X' top right-hand corner of the main window. This is so all notes are stopped and the midi port is closed properly.

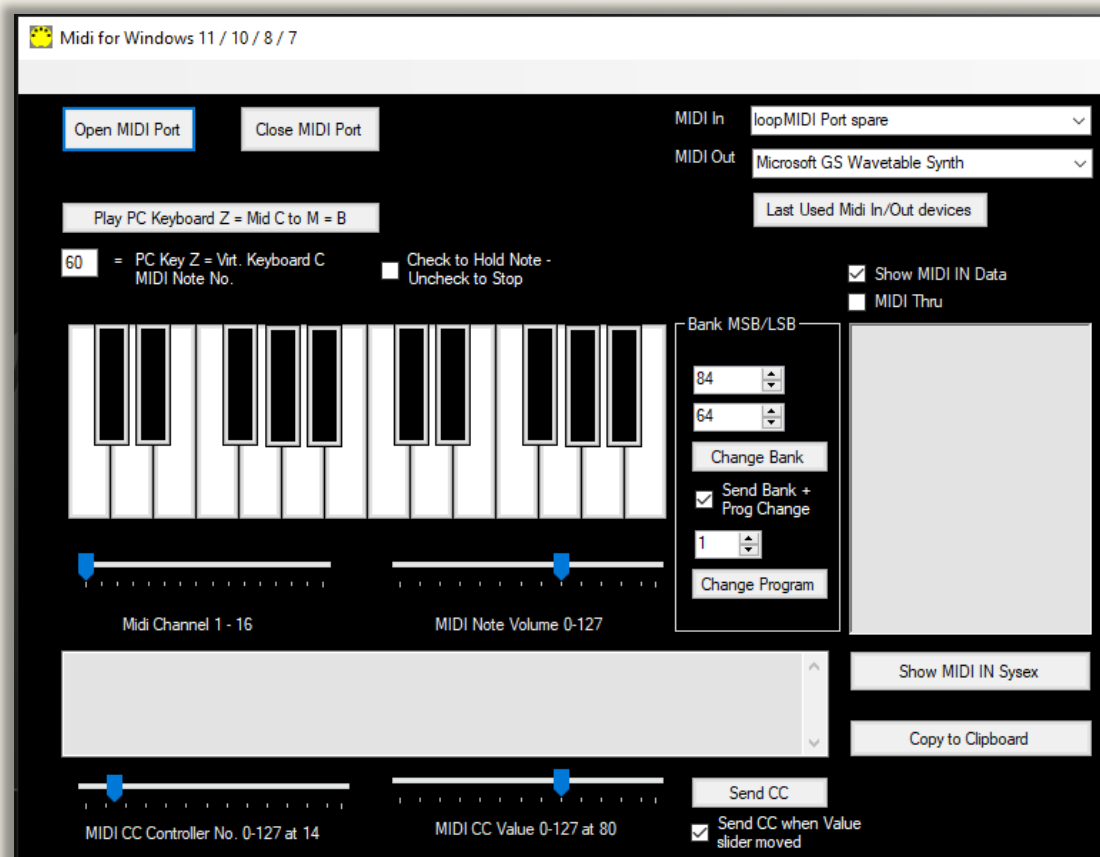
TOOLTIPS

Tooltips are provided for all slider controls



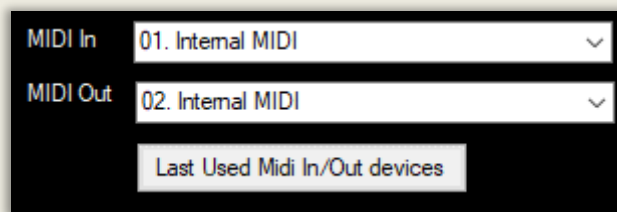
A typical Slider Tooltip showing precise values. Hold Ctrl and use the arrow keys for precise movement.

SETTING UP MIDI IN/OUT FOR THE SOFTWARE



This software generates Channel Voice data, Control Change (CC) data and system exclusive (sysex) data for sending to the RD2000 and can also receive this data from the RD2000.

Connect the RD Keyboard to the PC (midi ports or usb) midi out on the PC to midi in on the RD and midi in on the PC to midi out on the RD. Make sure the Roland usb driver is installed (Vendor) if you want to use audio over USB. The generic driver is MIDI class compliant and uses the operating systems in-built midi driver.



On the Settings/Midi Settings form select the MIDI In and Out devices (RD2000 for both unless you are Mapping - see later) and press 'Open MIDI Port' button. The button will turn Green. When you close the MIDI Port the Open Midi Port will turn pink and the software saves your selection of Midi In/Out devices to the Windows Registry, so next time you can just click 'Last Used Midi In/Out devices' and Open the Midi Port and you don't have to reselect. If your device list changes you will just need to manually select the devices again.

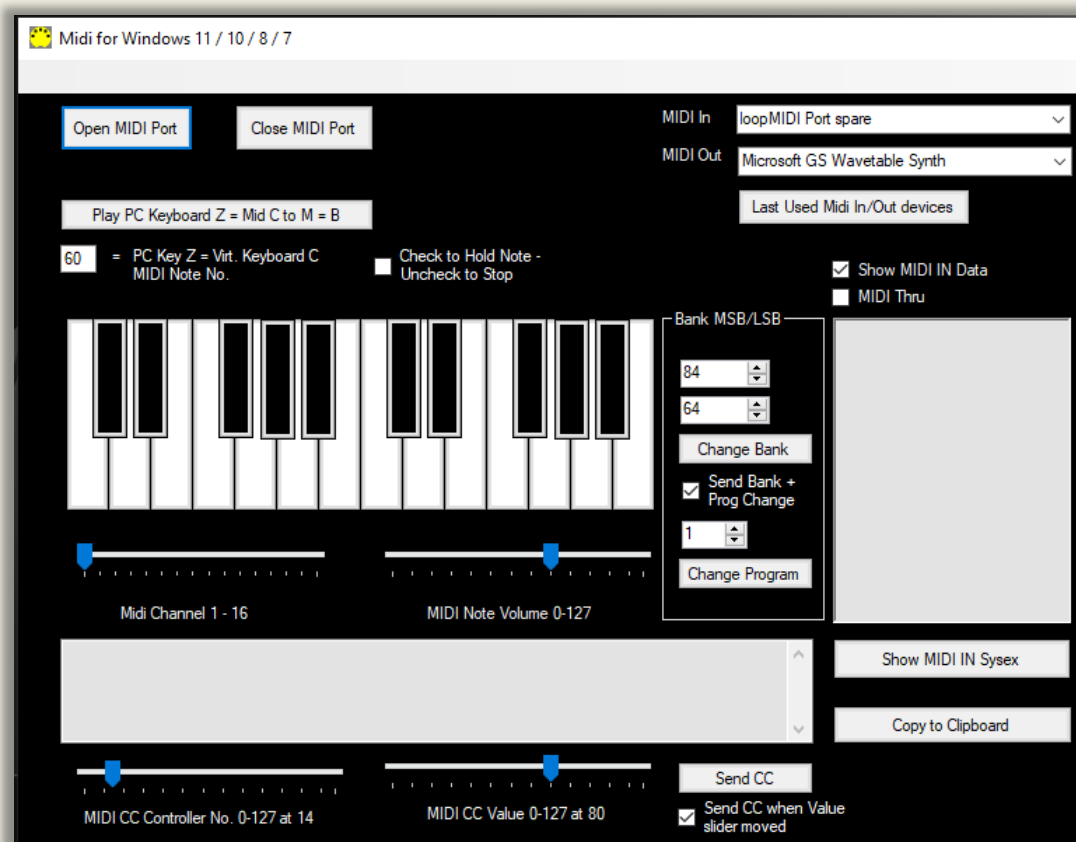
Midi/Settings on menu bar. An example of the midi devices in/out is shown above. Your list will look different. For downloading and sending settings from/to the RD2000 set both Midi In / Out to RD2000.

1. Set midi channel to correct channel - default on this software is 1.
2. To check all is working, use the mouse to play the virtual keyboard - OR
3. You can play the Midi software or device from the PC keyboard. Press 'Play PC Keyboard Z= Mid C...' button **immediately** before playing the pc keyboard.
4. The RD2000 should sound its current program.

You can hold a note set by the text box with 60 in it by checking the Hold Note checkbox. The Note number box will turn green. The note is releases when it's unchecked. You can change the Midi Note number from 60. 0 to 127.

The 'Midi Through' checkbox allows data to pass from the midi in port to the midi out port of this app. If unchecked it won't pass through - default. Note if midi thru is enabled in this software and your device you will get a midi loop and crash the app. Midi thru is used if you are generating midi from another app/device and monitoring it here before forwarding it with this app to yet another app/device.

SENDING NOTE DATA

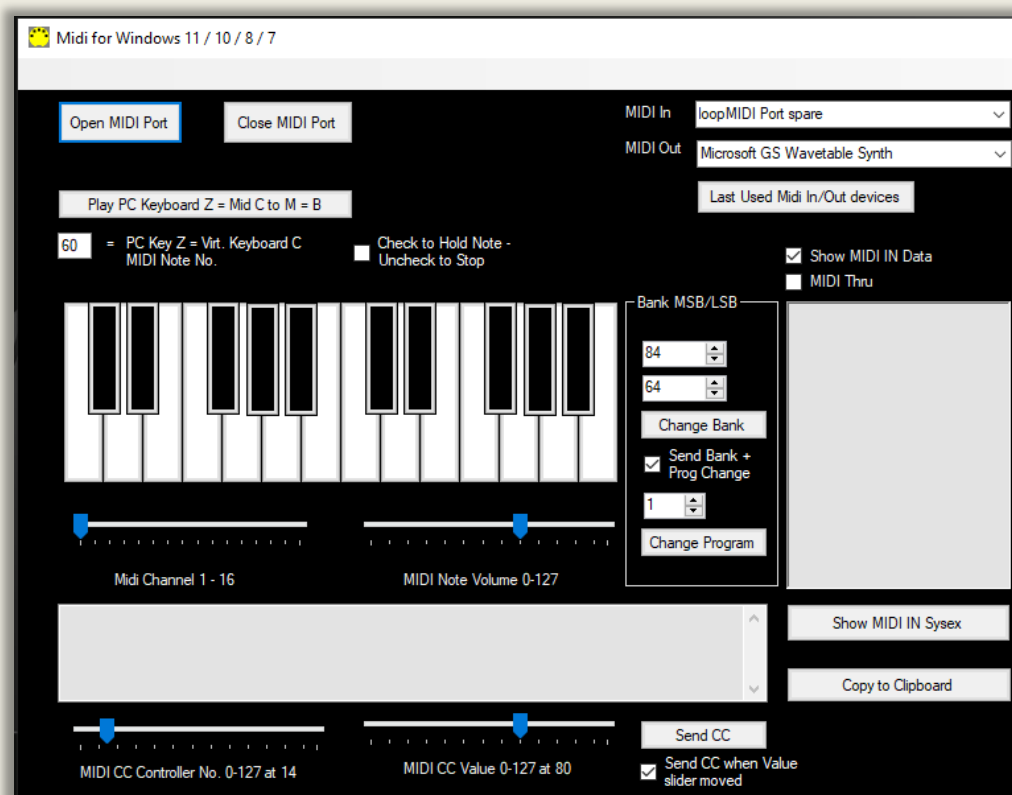


The MIDI form has a nifty virtual keyboard for remotely playing the Midi software or device whilst you edit the sounds on the PC. The keyboard has a range of 2 octaves.

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, so you can play chords. By the way the polyphony depends on your PC. My very old Pentium 2 - 400mhz could play 4 notes at once. My ancient laptop only two notes at once. Depends on their keyboard buffer.

The pitch of note Z can be set using PC Key Z or 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.

SENDING MIDI CONTROL CHANGE MESSAGES CC



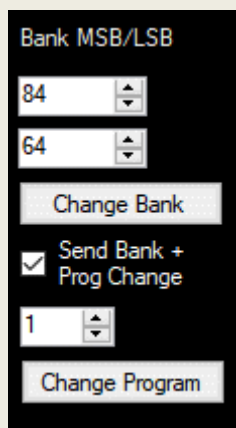
If you want to send Midi CC Control Change to the RD2000 then select the controller number 0 to 127 using the left-hand slider and the controllers value right hand slider at the bottom of the form.

Data is sent immediately if the 'Send CC when Value Slider is moved' check box is checked and the right-hand slider is moved. If unchecked press the Send CC button. See RD2000 midi implementation manual pages 1 to 4 for CC messages the RD responds to.

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 PROGRAM / BANK CHANGE

You can change the MIDI Bank and Program on midi instrument using MIDI. Note. The RD2000 uses a MSB and LSB bank address. You can also use the Program Library instead which is easier. There are 128x128 banks available in the midi spec. and 128 programs.



Set the programme number 1 to 128 and press button "Change Program". The Bank MSB and LSB default are set for the RD2000 for Banks starting at 01. It easier to use the Program Library form to select Programs. See later.

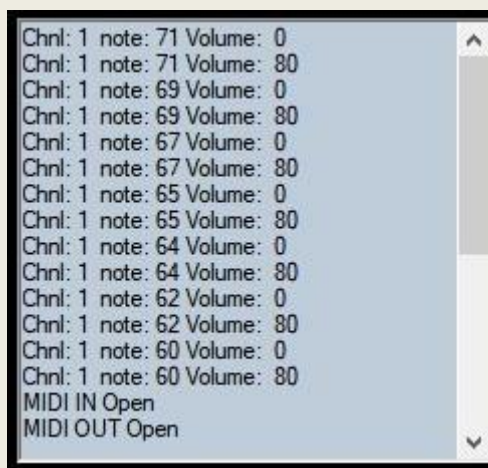
There are $128 \times 128 = 16384$ banks available in midi, with each one containing 128 programs. To try it on another midi instrument. Set Program to say 02 and click 'Change Bank'. Normally instruments need the program change message sent immediately after for this to work, so leave the check box ticked. See later how to change Tones, Rhythms and Program banks on the RD 2000.

Note that if you set the MIDI channel to "10", Bank 1, you will get the General Midi percussion instruments with each key sounding a different percussion instrument. There is no change if you vary the MIDI instrument number. If Bank 1 is set to 01 then you will get the General Midi instruments in the RD.

Note. Program change default channel on the RD is Midi channel 16.

RECEIVING NOTE DATA MIDI MESSAGES

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



```
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 port 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 check box 'Show Midi Data' as to whether to show Notes and CC messages as they arrive. Newest data at the top of the list. Notes, Sysex and CC data is only passed through from the Midi input to the output port of the app if midi thru is checked.

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. Defined ones such as 'Mod Wheel' = CC 1, Value 0.

```
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
```

RD 2000 MIDI CC

Summary of RD2000 Controller Assignments

| RD2000 Controller | Assign Mode CC Default values for a Program but you can set CC values | Ctrl Mode CC Values Fixed Midi Spec defined CC's |
|-----------------------------|--|--|
| Knob 1 | RD Tone CC14 | Unassigned |
| Knob 2 | RD Pan CC15 | Pan CC10 |
| Knob 3 | RD Joystick CC16 | Reverb CC91 |
| Knob 4 | RD Joystick CC17 | Delay CC93 |
| Knob 5 | RD Cutoff CC18 | Cutoff CC74 |
| Knob 6 | RD Resonance CC19 | Resonance CC71 |
| Knob 7 | RD Attack CC20 | Attack CC73 |
| Knob 8 | RD Release CC21 | Release CC72 |
| Button 9 | Unassigned | Unassigned |
| 1 Slider/ Midi Chnl/Zone | Master Volume CC7 for Chnl | Master Volume CC7 for Chnl |
| Damper/Sustain Pedal | Sustain CC64 | Sustain CC64 |
| Mod Wheel 1 | Modulation CC1 | Modulation CC1 |
| Mod Wheel 2 | Unassigned | Unassigned |
| Expression Pedal | Volume CC11 % of Master Volume | Volume CC11 % of Master Volume |
| Joy Stick Y | CC16 | Modulation CC1 |
| Joy Stick X | CC17 | |

Assign mode here you can set the midi CC values sent from the RD to the external sound module for an RD Program. Each program can have a different assignment. Hold shift button on the RD whilst moving an RD control to set the CC value. Two wheels, 1 slider, button 9 and 3 Pedals can be assigned to CC0 to 127 or Off. Note. You can only use one slider CC7 per midi channel unless you map. See the Parameter Manual Pages 7 and 8. Also see Foot Controllers and Wheels and Knob assignments pages in Program Common section. Default settings knobs 1 to 8 CC14 to 21. Ext Pedal CC7 Volume. Fader with level button lit CC7 Master Volume. Mod Wheel CC1 and Mod Wheel 2 unassigned by default. Assign to a CC as required.

Ctrl (Control) mode (Ctrl Button) the Midi Control Change CC values sent from the RD for the current external midi channel (Zone 5 to 8, midi chnl 1 to 4) and the control of some internal parameters. These are fixed. to: Knobs: 2 = Pan CC10, 3 = CC91 Reverb, 4 = CC93 Delay, 5 = Cutoff CC74, 6 = Resonance CC71, 7 =Attack CC73, 8 = Release CC72. 1 & 9 are not assigned. The sliders are all set to Midi Control Change CC07, master volume with the midi channel defined by the midi channel of the external zone selected. So only 1 slider per midi channel unless you map them. This is a Program Common setting.

See also Table of Midi CC messages at the end of this document and the RD2000 documentation for CCs' which it responds to.

HARMONIC BAR MODE

The Harmonic Bar (Drawbars) setting can be activated by pressing 'shift+scene'. Each drawbar setting can also be controlled by external Midi CC messages. Remember as you pull the drawbar out and towards you the sound gets louder, the opposite to a normal fader.

16' to 1' (slider 1 to 8) can be controlled using CC 102 to CC 110 sent from an external controller. Each drawbar responds to external CC values of 0, 16, 32, 48, 64, 80, 96, 112 and 127 covering the 0 to 8 drawbar positions.

In this Harmonic mode these sliders output these CC values too but Midi channel 1 to 4 for Zone 1 to 4 and midi channels 1 to 4 for zone 5 to 8 also.

MAPPING MIDI MESSAGES

This software allows you to map any incoming Midi Control Change - CC messages from the RD (or any instrument) to a different Midi CC. Or a note to a CC or a cc to sysex! You might want to keep your midi assignments in Assign Mode on the RD kept at default, they are all by program. And just remap using this software to any VST or external instrument. The RD has some limitations around the faders. They can't be used with external synths or VSTs unless you use just a single fader. They all send master volume CC7 messages, one CC7 for each midi channel selected as an external channel. This matrix can fix this. Note the exception is if the Tonewheel designer screen is active in which case they transmit Midi CC 102 to 110 but again on different Midi channels.

| RD Controller | Midi Chnl in 1 - 15 | Midi CC In 0 to 127 | Midi Chnl Out 1 - 16 | Midi CC Out 0 to 127 | Enabled = 001 click column cell to toggle |
|---------------|---------------------|---------------------|----------------------|----------------------|---|
| Note | 001 | --- | 001 | --- | 001 |
| Knob 1 | 001 | 014 | 001 | 014 | 001 |
| Knob 2 | 001 | 015 | 001 | 015 | 000 |
| Knob 3 | 001 | 016 | 001 | 016 | 000 |
| Knob 4 | 001 | 017 | 001 | 017 | 000 |
| Knob 5 | 001 | 018 | 001 | 018 | 000 |
| Knob 6 | 001 | 019 | 001 | 019 | 000 |
| Knob 7 | 001 | 020 | 001 | 020 | 000 |
| Knob 8 | 001 | 021 | 001 | 021 | 000 |
| Button 9 | 001 | 013 | 001 | 013 | 000 |
| Slider 1 | 001 | 007 | 001 | 020 | 000 |
| Slider 2 | 002 | 007 | 001 | 021 | 000 |
| Slider 3 | 003 | 007 | 001 | 022 | 000 |

Start Mapping

Set All Midi Out Chnls the same as note

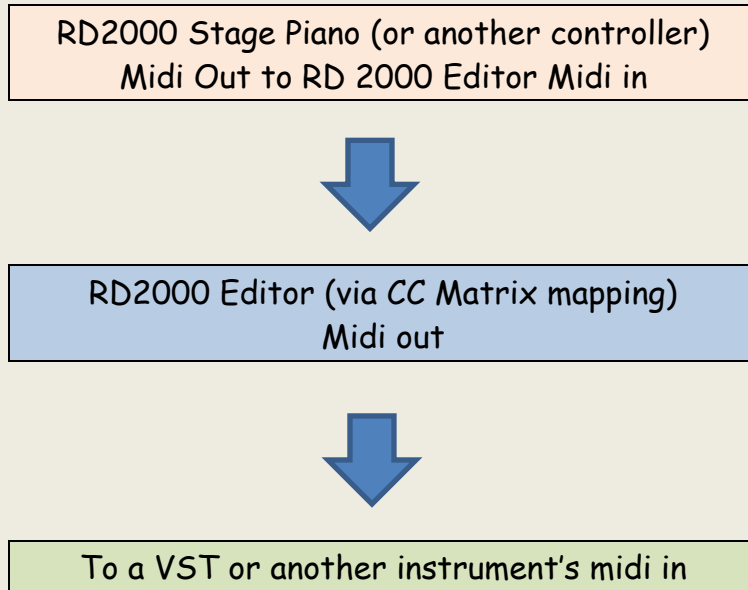
Set Harmonic Bar Slider CC in 102-110 CC out Starting 20

Save MIDI Map

Load MIDI Map

The RD2000 controllers are listed in the left column of the Mapping Matrix above. But you could use other instruments if you edit the Midi CC in values for their controllers. You can sort alphabetically/numerically by clicking on the column headers. Those rows selected as active are coloured Green. Inactive ones in the matrix are pink. If the right-hand column is 001 the row is enabled. If its 000 if the row is not enabled. By clicking on a rows right hand column, you can toggle whether the RD controller/row is active or Mapping not in the matrix. *See assignable RD controller list p8 Parmeter manual.*

MIDI SIGNAL FLOW



Example. Here is how to make knob 1 CC 014 on Midi channel 1/zone 5 ext converted to Midi channel 002 CC 15 to send to another instrument. Note any values you enter **MUST** be in the form xxx. 3 digits. When you edit a value click on the row below to finalise it, notice the left-hand column icon changes when edited. To activate the row just clicking the rows right hand column. Row is now *Green*,

| | RD Controller | Midi Chnl in 1 - 15 | Midi CC In 0 to 127 | Midi Chnl Out 1 - 15 | Midi CC Out 0 to 127 | Enabled = 001 |
|--|---------------|---------------------|---------------------|----------------------|----------------------|---------------|
| | | | | | | |
| | Note | 001 | --- | 001 | --- | 001 |
| | Knob 1 | 001 | 014 | 002 | 014 | 001 |
| | Knob 2 | 001 | 015 | 001 | 015 | 000 |

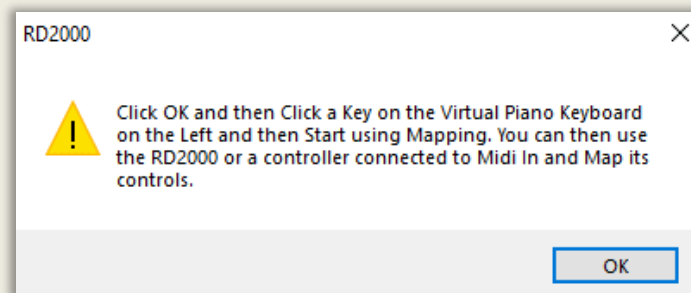
Edit mode for Knob 1 icon on left row is a pen.

| | RD Controller | Midi Chnl in 1 - 15 | Midi CC In 0 to 127 | Midi Chnl Out 1 - 15 | Midi CC Out 0 to 127 | Enabled = 001 |
|--|---------------|---------------------|---------------------|----------------------|----------------------|---------------|
| | | | | | | |
| | Note | 001 | --- | 001 | --- | 001 |
| | Knob 1 | 001 | 014 | 002 | 015 | 001 |
| | Knob 2 | 001 | 015 | 001 | 015 | 000 |
| | Knob 3 | 001 | 016 | 001 | 016 | 000 |

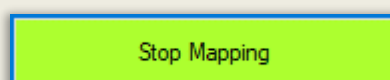
Edit for Knob 1 finalised by clicking on row below. Icon has now changed to a triangle. To deactivate the row, click on its right-hand column which will change from 001 to 000.

Example. How to Remap a Control Change CC Message

1. Set zone 5 as external zone on the RD (Green LED) midi channel 001 by default. Put the RD into assign mode using its dedicated button/LEDs. Note you can see the incoming CCs' in the text box to the left of the Matrix.
2. Make sure 'Midi Thru' is not checked on this software. Set midi in from the RD and midi out to your external synth/vst.
3. Set the knob 1 row of the matrix to incoming channel 001, Note. The Note Row of the matrix transmits the Note on/off/volume messages. So always use row 1 if you want notes transmitted and set it to the Midi output channel of the controller.
4. Set the CC output channel on the matrix for Knob 1 to Midi channel 002 and CC 015.
5. **To activate the matrix**, click on the 'Start Mapping' button. See below. You will then get the message box below which asks you to click a key on the virtual Piano keyboard to the left, which initialises the matrix. The 'Start Mapping' button will turn green.
6. **Note. Only edit the mapping matrix if the big mapping button is not green. Ie. You are not mapping otherwise values wont be updated.**

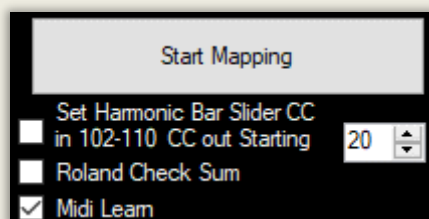


Now when you move knob 001 on the Rd2000 the software now sends it to Midi out on the new midi channel 002 and CC 15 with its values. So, you can control external synths and VSTs with ease. For instance, you could use all 9 sliders with different Midi CC remapped to another midi channel. You can stop the mapping function by clicking the Green Button.

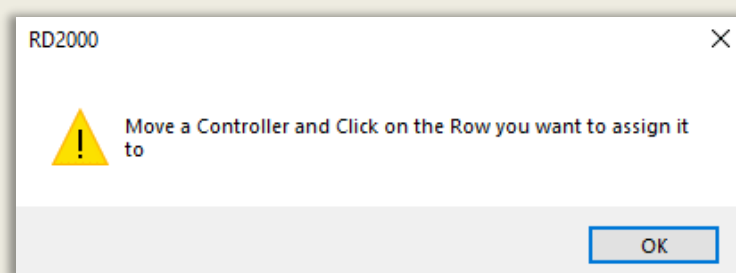


Midi Learn

Instead of entering the Incoming Midi Channel number and Midi CC/ Note Number arriving from your controller, you can just use Midi Learn.



1. Connect the RD2000/Instrument/ Controller to the software and open the Midi Ports
2. Check the 'Midi Learn' Checkbox - see above. You will get a Message box.



3. So just move a controller - Knob, slider, note etc and click on the appropriate row in the Matrix you want to assign it to. The new values will be set in the Matrix for the incoming Midi Channel and CC/note number.
4. Repeat point 3 for each controller
5. When finished uncheck the Midi Learn Checkbox

Note. For Pitch Bend, Channel or Polyphonic Aftertouch only the incoming Midi Channel is updated as this is all that is required.

Saving and Loading Midi Maps

You can Save and Load Midi maps as a plain text comma separated files. This means you can have a map for each of your setups. You can use any number of the rows. Note. If you click on the table header you can sort numerically / alphabetically. For instance, you can list so the remapped channels 001 on the right-hand column are at the top. Below is a view of the lower half of the Midi Mapper when you scroll down. If you want to rename the Controllers you can save the new names when you save the map and then reload them.

Note. A couple of fader maps are included in the installation directory as examples. rd2000_fader_map.txt. which sends CC messages out and Korg Nautilus drawbar map.txt which sends sysex out - see later.

| RD Controller | Midi Chnl in 1 - 15 | Midi CC In 0 to 127 | Midi Chnl Out 1 - 16 | Midi CC Out 0 to 127 | Enabled = 001 click column cell to toggle |
|-------------------------|---------------------|---------------------|----------------------|----------------------|---|
| Slider 8 | 004 | 007 | 001 | 027 | 000 |
| Slider 9 | 005 | 007 | 001 | 007 | 000 |
| FC 1 Damper Pedal | 001 | 064 | 001 | 064 | 000 |
| FC 2 Pedal | 001 | 065 | 001 | 065 | 000 |
| Mod Wheel 1 | 001 | 001 | 001 | 001 | 000 |
| Mod Wheel 2 | 001 | 013 | 001 | 013 | 000 |
| Ext Expression Pedal | 001 | 007 | 001 | 007 | 000 |
| Joy Stick Y | 001 | 016 | 001 | 016 | 000 |
| Pitch Bend Joy Stick X | 001 | --- | 001 | --- | 000 |
| Note to CC | 001 | 021 | 001 | 018 | 000 |
| Channel After Touch | 001 | --- | 001 | --- | 000 |
| Polyphonic After Tou... | 001 | --- | 001 | --- | 001 |

Setting Midi Out Channel for All controls to the same channel. You will normally use the same midi out channel for all controllers. If you are controlling a VST or midi instrument you can use all of the RD2000 controllers if you want to. If you set the Note Midi out channel to the one you want. You can quickly set all the other controller Midi Out channels to the same value by clicking the button 'Set all Midi Channels out same as Note'. Remember the controllers you want to use need to be enabled by clicking in the right-hand column to turn the row green.

For information. CC Control Change messages start a Status byte of B followed by the Midi Channel (0 to 15). Hex(B0) to Hex(BF) in the Midi 1 Specification. -> 176 to 191 in decimal. Where B defines it's a CC message

and the second byte 0 to F is the Midi Channel - which is normally transposed to Channel 1 to 16 for the user.

Mapping a Midi CC to Channel After Touch

If your Keyboard, like the RD2000, does not produce Channel Aftertouch data you can assign a controller such as a Damper or Sustain pedal to generate the AT data. When you press a note, you can create the AT data by pressing a pedal, expression pedal or other controller.

To do this Choose your incoming channel number and incoming CC controller number (say channel 001 knob 1 - 014 as below). Then just set the outgoing channel number and set the Midi CC out value to 128. See Below.

| | Controller | Midi Chnl in 1 - 15 | Midi CC In 0 to 127 | Midi Chnl Out 1 - 16 | Midi CC Out 0 to 127 | Enabled = 001 click column cell to toggle |
|--|------------|---------------------|---------------------|----------------------|----------------------|---|
| | | | | | | |
| | Note | 001 | --- | 001 | -- | 001 |
| | Knob 1 | 001 | 014 | 001 | 128 | 001 |
| | Knob 2 | 001 | 015 | 001 | 021 | 000 |
| | Knob 3 | 001 | 016 | 001 | 022 | 000 |

Then press 'Start Mapping'. Now when you play notes and move Knob 1 the channel after touch data will be sent.

Pitch Bend - Joy Stick X direction

Any Midi Data coming in as Pitch Bend data on the Pitch Bend Row (Joy Stick X direction) will be mapped and also sent out as Pitch Bend Data to the output channel specified by the user if the Midi CC out column is set to 128. If that column is set to 0 to 127 it will map pitchbend to a Midi Control Change CC message of your choice. In the example below pitch bend data is set as coming in on Midi channel 1 and being sent out on Midi channel 1. You can choose any channel between 1 and 16 for in and out. The right-hand column 001 means the row is active and hence the row is Green.

Midi Channel In column



| | | | | | | |
|--|------------------------|-----|-----|-----|-----|-----|
| | Ext Expression Pedal | 001 | 007 | 001 | 007 | 000 |
| | Joy Stick Y | 001 | 016 | 001 | 016 | 000 |
| | Pitch Bend Joy Stick X | 001 | --- | 001 | 128 | 001 |
| | Note to CC | 001 | 021 | 001 | 018 | 000 |
| | Channel After Touch | 001 | --- | 001 | --- | 000 |

128 = pitchbend or
0 to 127 = CC



Midi Channel Out column

For information. Pitch bend messages start a Status byte of E followed by the Midi Channel (0 to 15). Hex(E0) to Hex(EF) in the Midi 1 Specification. -> 224 to 239 in decimal. Where E defines Pitch Bend and the second byte 0 to F is the Midi Channel - which is normally transposed to Channel 1 to 16 for the user. Pitch bend is defined by two bytes which give a resolution of 128^2 values = 16384 values which give a smooth sweep in pitch, as 128 values would result in audible steps in the pitch bend.

Channel After Touch AT

The RD2000 keybed does not generate Channel or Polyphonic after touch, but the RD can respond to it. You can assign a controller to AT on the RD such as an expression pedal and send that AT data out to an External Zone. You can also use the matrix with a synth that does generate AT data and map to another synth that responds to AT. I've included Channel AT and Polyphonic AT for these purposes. You can map the incoming after touch data from one midi channel to another midi channel if a value of 128 is entered in the Midi CC out column. See below. You can also convert a channel AT message to a Midi CC message if a value between CC 000 and CC 127 is entered in the Midi CC out column.

Midi Channel In column



| | | | | | |
|-------------------------|-----|-----|-----|-----|-----|
| Note to CC | 001 | 021 | 001 | 018 | 000 |
| Channel After Touch | 001 | --- | 001 | 128 | 001 |
| Polyphonic After Tou... | 001 | --- | 001 | --- | 000 |



If CC out value = 128 then Chnl AT
if between 000 to 127 then CC



Midi Channel Out column

For information. Channel AT messages start a Status byte of D followed by the Midi Channel (0 to 15). Hex(D0) to Hex (DF) in the Midi 1 Specification. -> 208 to 224 in decimal. Where D defines Channel AT and the second byte 0 to F is the Midi Channel - which is normally transposed to Channel 1 to 16 for the user.

Polyphonic After Touch

Poly After Touch produces a different AT message for every midi note 0 to 127 and can be very expressive. The RD2000 keybed does not generate Poly AT, but I've included it in case you use a synth which does.

| | | | | | |
|-------------------------|-----|-----|-----|-----|-----|
| Ext Expression Pedal | 001 | 007 | 001 | 007 | 000 |
| Joy Stick Y | 001 | 016 | 001 | 016 | 000 |
| Pitch Bend Joy Stick X | 001 | --- | 001 | --- | 000 |
| Note to CC | 001 | 021 | 001 | 018 | 000 |
| Channel After Touch | 001 | --- | 001 | -- | 000 |
| Polyphonic After Tou... | 001 | --- | 001 | -- | 001 |

This maps incoming Polyphonic AT to a different midi channel. Status byte A, Midi channels 001 to 016. -> 160 to 175 in decimal. It produces two data bytes - Midi Note number and its Poly AT value.

Setting up the Sliders 1 to 9

The Sliders on the RD200 operate in 2 modes for external zones.

1. Normal assign mode. Each external zone fader outputs CC 007 By default, zone 1 to 4 output on midi channels 1 to 4 and zones 5 to 8 midi channels 1 to 4 also.
2. In Harmonic bar mode the output of each fader is CC 102 to 110 with the midi channels as above. The faders also work in reverse so as you move them towards you the value increases.

I have assumed you will use Zones 1 to 4 for internal sounds and zones 5 to 8 for external sounds. The default settings on the matrix match the default settings on the RD. Of course, you can change all of this.

To use each slider/fader with an external instrument or VST, all you need to do is set their midi channel to the external instrument's Midi channel and assign a different Midi CC out to each slider. See below. Then enable their row by clicking on the righthand column so it becomes green. For any VST or external instrument refer to its manual for Midi CC's it responds to. Finally save your Midi CC map for future use. Turn on the RD2000 Sliders for sending Midi out with their Assign button on the panel and LED green for External Zone.

| RD Controller | Midi Chnl in 1 - 15 | Midi CC In 0 to 127 | Midi Chnl Out 1 - 16 | Midi CC Out 0 to 127 | Enabled = 001 click column cell to toggle |
|-------------------|---------------------|---------------------|----------------------|----------------------|---|
| Knob 7 | 001 | 020 | 001 | 020 | 000 |
| Knob 8 | 001 | 021 | 001 | 021 | 000 |
| Button 9 | 001 | 013 | 001 | 013 | 000 |
| Slider 1 | 001 | 007 | 001 | 020 | 000 |
| Slider 2 | 002 | 007 | 001 | 021 | 000 |
| Slider 3 | 003 | 007 | 001 | 022 | 000 |
| Slider 4 | 004 | 007 | 001 | 023 | 000 |
| Slider 5 | 001 | 007 | 001 | 024 | 001 |
| Slider 6 | 002 | 007 | 001 | 025 | 001 |
| Slider 7 | 003 | 007 | 001 | 026 | 001 |
| Slider 8 | 004 | 007 | 001 | 027 | 001 |
| Slider 9 | 005 | 007 | 001 | 007 | 000 |
| FC 1 Damper Pedal | 001 | 064 | 001 | 064 | 000 |
| FC 2 Pedal | 001 | 065 | 001 | 065 | 000 |

Start Mapping

Set Harmonic Bar Slider CC in 102-110 CC out Starting 20

Save MIDI Map

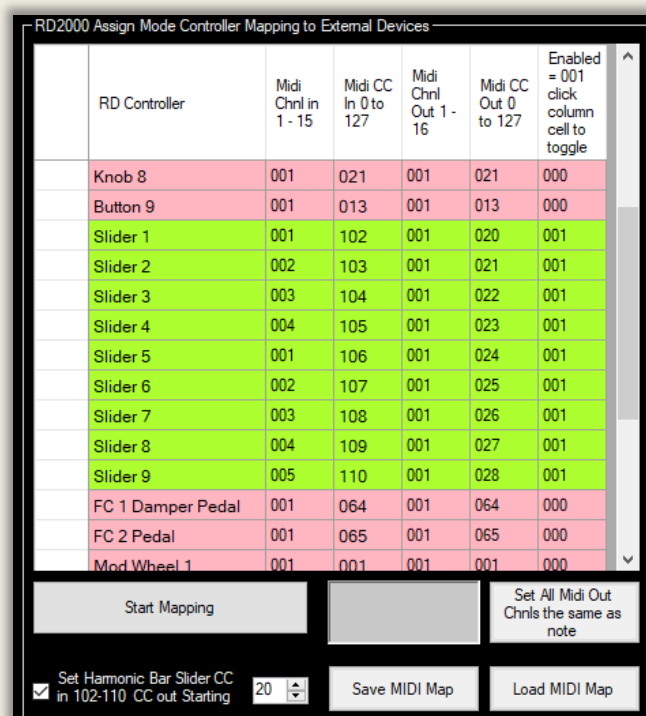
Load MIDI Map

Set All Midi Out Chnls the same as note

Note the Slider Midi CC out column runs from 020 to 027. All sliders output on Midi channel one now.



In Harmonic bar (drawbar) mode (Shift & Scene) the 9 sliders work differently. See Midi CC section earlier. If the Tone Wheel/Designer screen is displayed they will send out Midi CC 102 to 110 instead. Outputting values 0 to 127 for drawbar positions 0 to 8. But each slider will still outputs different midi channels (External Zone Green LED) channel 1 and then incrementing channels by +1 for successive sliders, for zones 1 to 4 and starting again for 5 to 8.



The 'Set Harmonic Bar CC 102 to 110 check box sets slider midi in values to the matrix to these values. You also set the starting Midi CC for the faders on the CC out column starting at the value you select in the updown box'. You need to set the midi out channel if not 001. Finally activate the row so its Green. The aim is to help you set up the sliders if you are using them as controllers for an external instrument in Harmonic bar mode.

Mapping a Note to a CC

This row is a special mapping. It converts a note to a CC. You reserve one key on the 88-note keyboard to this function. Like before you choose the midi in channel and the mapped midi out channel. Below in is 001 and out is also 001. The midi note you might reserve for this feature is A0 midi note 021 (the lowest note on the RD keyboard) in this example, but can be any note up to C8 midi note 108. Generally best to choose one you won't use often for playing.











| | | | | | | |
|---|-------------------|-----|-----|-----|-----|-----|
| | Ext Expression... | 001 | 007 | 001 | 007 | 000 |
| | Joy Stick Y | 001 | 016 | 001 | 016 | 000 |
| ▶ | Joy Stick X | 001 | 017 | 001 | 017 | 000 |
| | Note to CC | 001 | 021 | 001 | 018 | 001 |

Finally, you decide what Midi CC you want to map to. In this case 018. When you hit A0 the harder you hit the note the higher the CC's value. Notes output values (volume) 0 to 127. Note off, volume 0 is ignored here. You could use this feature for switches or variable CC values. Obviously gradual changes in CC value depend on how gradually you change your strike for subsequent A0 notes.

If Note to CC is enabled then the note number selected, 021 in this case - A0 - will only send Midi CC and note 021 will not sound. This is because you want to control CC value and only use the note as a controller. The 'louder' you play the A0 key the controller value will increase. As you play the note softer the CC value will reduce.

For information. Note messages start a Status byte of 9 followed by the Midi Channel (0 to 15). Hex(90) to Hex(9F) in the Midi 1 Specification. -> 144 to 159 in decimal. Where 9 defines it's a note and the second byte 0 to F is the Midi Channel - which is normally transposed to Channel 1 to 16 for the user.

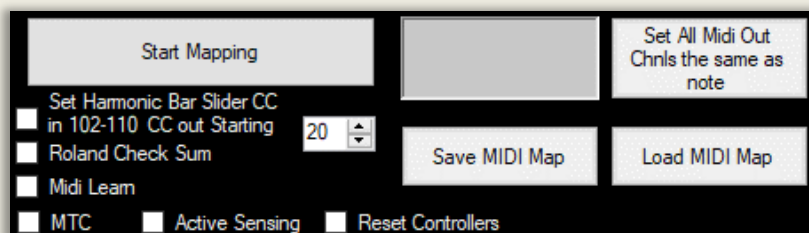
Summary Of Possible Mappings

| To | Notes | Poly After Touch | Midi CC | Chnl After Touch | Pitch Bend | Sysex 7 Bit and 4/4 Bit |
|-----------------------------|---|---|--|--|--|---|
| From | | | | | | |
| Notes | 5  | | | | | |
| Note | | | 5  | | | |
| Poly After Touch | |  | | | | |
| Midi CC | | | 1a  | 1b  | | 4  |
| Chnl After Touch (Pressure) | | | 3a  | 3b  | | |
| Pitch Bend | | | 2a  | | 2b  | |

Notes

- 1a Set Midi CC out column value 0 to 127 to remap CC
- 1b Set Midi CC out column value to 128 to map CC to Chnl AT
- 2a Set Midi CC out column value 0 to 127 to map PB to CC
- 2b Set Midi CC out column to 128 to remap PB
- 3a Set Midi CC out column 0 to 127 to map Chnl AT to CC
- 3b Set Midi CC out column to 128 to remap Chnl AT
- 4 Set Right Hand Column to 001 for 7-bit and 002 / 003 for 4/4 bit and input sxstring /max/min values - See next section
- 5 Set chosen Midi note number Midi CC in Column and Set Midi CC out value 0 to 127

Mapping Midi System Real Time Messages



Some Midi Messages are channel independent but can be passed through the Midi Mapper if you wish.

MTC - Midi Timing Clock pulses (plus Start, Continue and Stop). This allows you to have the Timing master device transmit through this software and out to the slave devices. Just check MTC check box to allow these messages to pass through. The timing clock runs at a rate of 24 messages per quarter note. Hex Status byte F1 to FC

Active Sensing - This sends a signal at a minimum of every 0.3 seconds to check that a midi device is connected and not become disconnected. Check the Active Sensing check box to pass through. Not all devices recognise this but its part of the Midi specification. Hex Status byte FE

Reset Controllers - This returns all devices to their initialised power up configuration. Check the Reset Controller check Box to pass through. This would be sent from the input device by a manual command. Best to use with caution. Hex Status byte FF

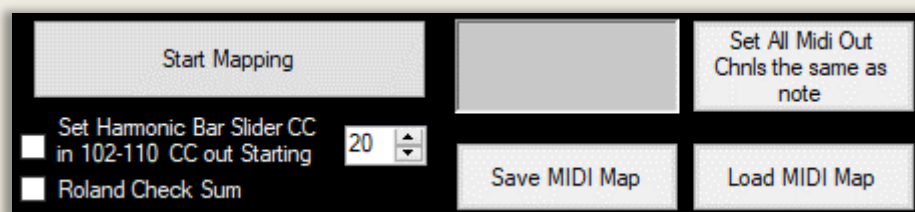
Note. MTC and Active sensing will pass quite a lot of Midi data through. Normally they work fine. However, if you get any problems with Midi data becoming corrupted uncheck the boxes for these messages. It will depend a lot on the hardware/software instruments you use and if they followed the Midi specification faithfully.

MAPPING SYSEX MIDI MESSAGES

Sysex (System Exclusive) messages can control almost all an instrument's settings. Now you can map a Midi CC message to a Sysex message. This can give you virtually total physical control of another synth/keyboard or the RD2000. A MIDI Sysex message always starts with a Status byte F0 and the message always ends with F7. Manufacturers can put mostly what they like in between but they have to start with a manufacturer ID and instrument ID.

There are four important points:-

- The user must have a reasonable understanding of the sysex implementation of the instrument you want to control. The user has to input the start of the sysex strings.
- If you use a Roland instrument you will probably need the Roland checksum. If it requires a checksum then check the checksum box - see image below.



- You can also control instruments from Korg, Yamaha and just about any manufacturer etc. from the RD (or any instrument/control surface which generates CC messages). Make sure in this case the Roland check sum box is unchecked.
- The sysex only sends the LSB values which means only one byte of data is sent. This is either 7 bit or 4/4 bit sysex data. To map from a CC value there is generally only one byte to use anyway.

When you enter the Sysex string the software adds the data generated from the Midi CC mapping, check sums if required and the final " F7" to end the string. Note you can only map Midi CCs. Notes, pitchbend or aftertouch are not allowed.

Example - Korg

A Korg sysex string (which has to be in Hex), would look like this for say the Triton Classic - setting a multisample:-

- User inputs start of sysex string "F0 42 30 50 41 03 00 01 00"
- Data collected from Midi CC input added by this software
- " F7" ends sysex string added by software.

The final string sent out is "F0 42 30 50 41 03 00 01 00 Data F7"

Example - Roland

Make sure the Roland Checksum check box is checked. Here is an example of the sysex string in Hex you would enter for the RD2000

"F0 41 10 00 00 75 12 xx xx xx xx"

F0 = start of sysex string

41 = Roland ID

10 00 00 = Device ID - change this as necessary for your Roland model

75 = instrument ID = RD 2000 - change this as necessary for model

12 = Message type for transmission of data to the Instrument

Enter HEX values xx in pairs xx xx xx xx = PARAMETERS from the midi implementation manual for the instrument

Data coming in from the Midi CC mapping - added by this software

The penultimate part of the string is the Roland Checksum - to ensure the data is properly sent - added by this software

Then " F7" end of sysex string - added by this software

How to Send Sysex

When you scroll to the right of the Mapping matrix you can see the Sysex mapping section.



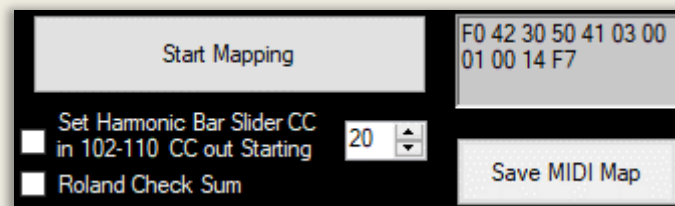
To send sysex the whole row has to be enabled "green" as before. To send Sysex instead of CC data. click on the right-hand column cell headed 'Enabled = 001" if the cell shows 000. The remaining part of the row will turn green. If you are sending to a Roland Instrument, check the Roland Checksum checkbox. Then Click "Start Mapping" button as before. A "---" means you can't use this controller. Eg, notes, pitchbend or aftertouch to map Sysex.

In the sysex column cell you enter the sysex string in Hex pairs starting with F0 with a space in between each pair and no trailing space. The Data part and F7 are added by the software. The Max and Min values turn the incoming Midi CC data to the range you want. For instance, a drawbar for a typical external instrument such as the Korg Kronos or Nautilus typically accepts a value range of 0 to 8. So incoming data 0 to 127 is scaled to 0 to 8 by the software if you set max value to 8 and min value to 0.

A Korg Triton Classic Synth example below for the "Knob 1" row.

| | | | | |
|-----|----------------------------|-----|-----|-----|
| --- | F0 42 30 50 41 03 00 01 00 | 000 | 127 | 001 |
| F0 | 000 | 127 | 000 | |
| F0 | 000 | 127 | 000 | |
| F0 | 000 | 127 | 000 | |

To check the sysex string works just open the Midi port and connect to your external instrument. Click on the green Sysex string Cell (F0 42 30.....) which you entered and the Sysex will be sent using a data value set by the updown box below the matrix - set to a permissible value. If it does not work you can edit the sysex string and try again! The grey textbox to the right of the 'Start Mapping' button shows the sysex that has been sent. See example below.



Once its working save the Map. You can then Load it another time.

Now you can then turn on Mapping as described earlier by pressing "Start Mapping" and control the sysex values with a physical controller on your RD2000, or any other control surface, outputting Midi CC. In the example above Knob 1 will control the sysex values transmitted. You can then add further rows of sysex strings if you want to use more physical controllers.

Tip... You can use windows cut and paste to copy values in any of the cells. From version 3.9.5 you can reverse the sliders - to act as drawbars so the sound is louder as the slider comes towards you - by putting 004 in the right hand column instead of 001.

If you are comfortable with Sysex give it a try!

Using 4 bit / 4bit Sysex data

A bit of theory.

This software can map CC to 7 bit and 4/4 bit data.

- 7-Bit data takes values from 0 to 127 -> 00000000 to 11111110
- 4/4 bit splits a 7-bit value into 2 values 0 to 15 and 0 to 127 -> 00000000 to 1111xxx and 00000000 to 11111111 in steps of 16 - so 7 bits can portray two values. Two Drawbars for instance !

Most sysex is 7-bit but you can use 4/4 bit in the matrix with the range of max/min values possible would be between 0 and 15. In the drawbar example we only need values 0 to 8 for the drawbar positions. So

- The first drawbar would have a Min of 0 (00000000) and Max of 8 (00010000)
- The second drawbar would be represented by a Min of 0 and Max of 8 in the columns again but being mapped to 0 (00000000) to 127 (11111110) in steps of 16

Incoming CC of 0 to 127 would be scaled so that

- For the first drawbar incoming CC 0 to 127 is mapped 0 to 8 - Min 0, Max 8
- For the second drawbar incoming CC 0 to 127 is mapped 0 to 8 - Min 0 to Max 127 in steps of 16. So, 0 to 15, 16 to 31, 32 to 47 ... each produce a value of 0, 1, 2 etc.

The first 4 bits are accessed by putting 002 in the right column of the Matrix. The second 4 bits can be accessed by putting 003 in the right column.

To control the EXi CX3 16' upper drawbar on a Korg Nautilus or Kronos the sent 4 bit sysex in Hex would look something like this: -

"F0 42 30 00 01 5D 43 0C 06 00 01 09 00 00 Data F7" 16' Korg Nautilus
"F0 42 30 68 43 0C 06 00 01 09 00 00 Data F7" 16' Korg Kronos

The right-hand column is set to 002 as this drawbar needs the first 4 bit data.

Remember. You enter a space between each pair of characters! When you input the string and there is no space after the last character you enter. "F0 42 30 00 01 5D 06 00 01 09 00 00" in the above example. Max val 8. Min val 0.

The next drawbar would use the second 4-bit value so 003 would be set in the right-hand column with the same sysex string. Mon 0 Max 8.

| | | | |
|--|-----|-----|-----|
| F0 | 000 | 127 | 000 |
| F0 42 30 00 01 5D 43 0C 06 00 01 09 0... | 000 | 008 | 002 |
| F0 42 30 00 01 5D 43 0C 06 00 01 09 0... | 000 | 008 | 003 |
| F0 | 000 | 127 | 000 |

Here is an example of two sliders on your control surface generating the first 4-bit value and the second 4-bit value. Notice 002 and 003 are set in the right column. The sysex column in green would contain the same sysex string F0....etc.

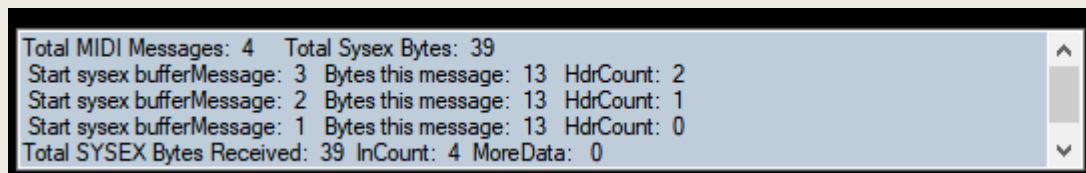
The next two drawbars would use a different sysex string but using the first and second 4-bit values, and so on in pairs of drawbars.

PS. I need a Nautilus owner to check sysex string as I don't own one. If someone can confirm the correct string, please let me know.

Note. As Midi CCs only provide 7-bit data for their value, sysex parameters requiring an MSB & LSB can't be mapped. Nor can sysex requiring 4/4/4/4-bit data.

RECEIVING SYSEX MIDI MESSAGES

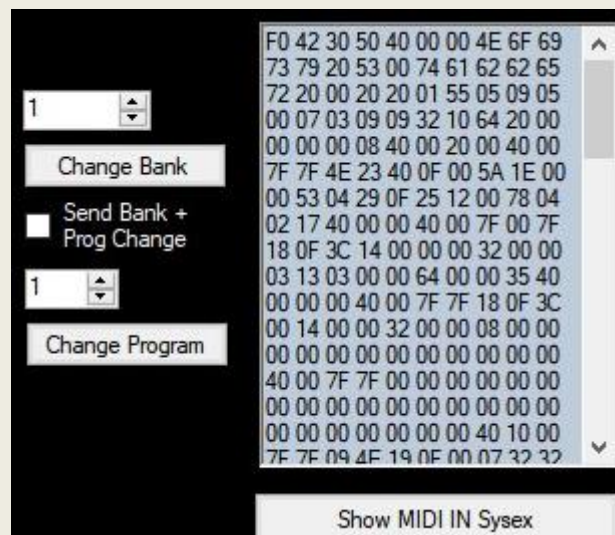
To receive a midi data dump from an instrument, set the instruments midi out to the midi in of the app. Instruct the instrument or software (This is done on the Load buttons in Vpiano for instance) to start the dump. Incoming data will be displayed as it comes in together with Sysex data. When the midi 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 main textbox by clicking the 'Show MIDI IN Sysex button. Note the bottom text box shows the total number of midi messages received by the software. In the image above 4 messages were received in total, 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.

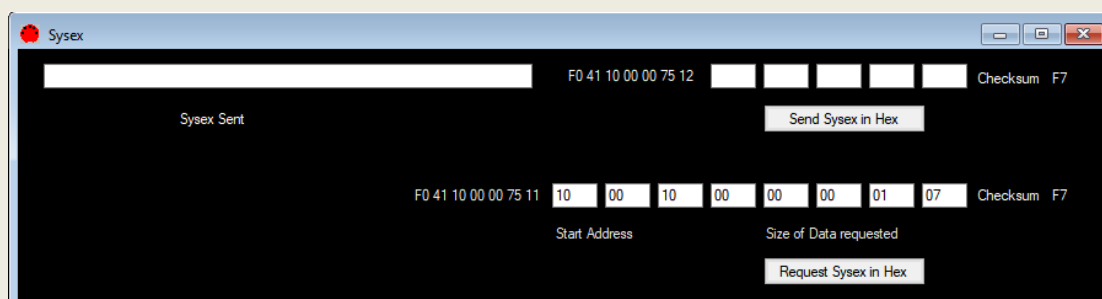


The entire main text box can be 'copied to the windows clipboard'. 'Copy to clipboard' button. This includes the complete dump sysex data.

The 'Midi Through' checkbox allows data to pass from the midi in port to the midi out port of this app. If unchecked it won't pass through. Note if midi thru is enabled in the software and your device you will get a midi loop and crash the app. Midi thru is if you are generating midi from another app and monitoring it before forwarding it with this app to another device.

Note. If you are pulling setting of the RD - say VPiano - make sure that the Midi Thru is unchecked. Its default setting. Otherwise, you may get a midi loop unless Local Control is set to off on the RD.

SENDING SYSEX



Here you can send a Sysex string of your choice. The sysex will be sent to the output port and the sysex string will be displayed in the 'Sysex Sent' text box on this form and the midi form. Note some of the RD strings are longer such as the 4 bit ones. It's easier to use the Load button on say Vpiano to request and receive midi dumps.

Users can enter any sysex string, which complies with the RD2000 sysex implementation manual using the 'Enter Sysex feature'. Note values must be in hex as per the manual and in pairs. 0 to 9 and A to F. eg. A9, 00, 7C. Note 0 must be entered as 00. The Roland checksum is automatically calculated. Enter values and click "Enter Sysex in Hex"

Sending System Exclusive messages

So is the first part of the string entered automatically =
F0 41 10 00 00 75 12

F0 = start of sysex string

41 = Roland ID

10 00 00 = Device ID

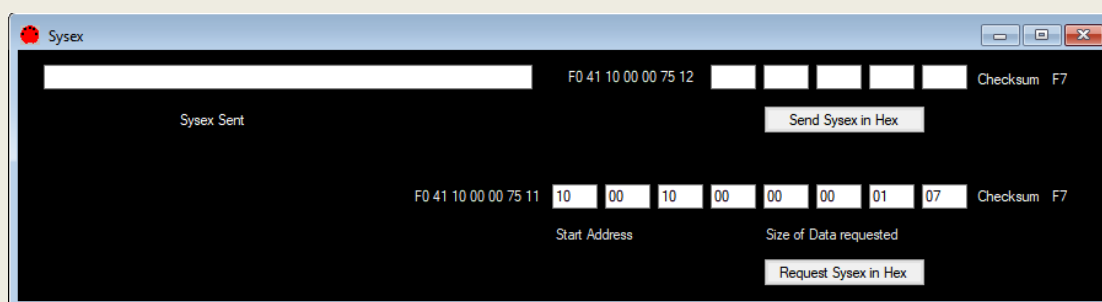
75 = instrument ID = RD 2000

12 = Message type for transmission of data to the RD2000

Enter HEX values in pairs in the 5 white text boxes of your choice =
PARAMETERS

The final part of the string is the Roland Checksum - to ensure the data is properly sent

F7 ends the sysex string.



Requesting MIDI dumps using Sysex

The Request Sysex button sends an IRQ - information request - command to the RD.

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

The first four boxes define the start address of the data which you enter. Enter values in Hex. MSB, address1, address2, Address LSB

The remaining 4 boxes define the size of the data being requested starting at the start address. Enter in Hex. MSB, size1, size2, Size LSB

The final part of the string is the Roland Checksum - to ensure the data is properly sent and is calculated automatically in this software.

F7 always ends a sysex string.

To capture the Midi Dump:

1. Press 'Request sysex in Hex' button on the sysex form
2. The sysex will be stored and can be displayed in the text box on the Midi form - press 'Show Midi in Sysex' button
3. Press 'Copy to clipboard' button on the Midi form will copy the entire contents of the text box to the windows clipboard for pasting into a text editor such as notepad. The check box 'put sysex on clipboard' when checked stores just sysex on the clipboard.

USING WITH VIRTUAL INSTRUMENTS

If you want to connect the RD2000 to a virtual instrument you will need to route the RD midi signal to the PC. Set the midi in channel of the virtual instrument to the RD2000 Zones Midi channel number. By default external zones 5 to 8 map to midi out channel 1 to 4.

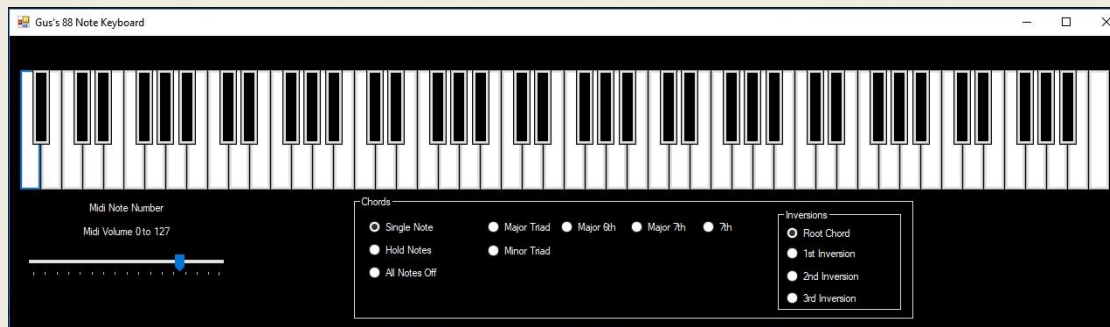
TIP. For internal PC midi routing, if you ever need to do this :-

1. On a PC Download the Freeware application for internal PC midi routing. I recommend the free LoopMIDI [Software | Tobias Erichsen \(tobias-erichsen.de\)](http://Software|TobiasErichsen(tobias-erichsen.de))
2. Set the Midi **output** of the RD2000 editor to say LoopMIDI (internal midi)
3. Set your virtual instrument midi **input** to LoopMIDI (internal midi)
4. You can now transfer midi from pc application to the other application on the same PC!
5. On a Mac you just use the inbuilt IAG driver.

RECORDING USING SOFTWARE SUCH AS LOGIC, BITWIG, BANDLAB SONAR, CUBASE ETC.

You can record from the RD2000 directly into a midi/audio PC sequencer/editor like Bitwig, Logic, Cubase or BandLab Sonar. The user can send RD2000 midi out and audio out to midi and audio in on the DAW. This will enable you to edit the recording as desired in the DAW. Then send midi and audio back to the RD. Remember the Roland generic driver will only transfer Midi. The Roland Vendor driver will transfer both Midi and audio. See tutorial 1.

GUS'S 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 program.

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

The Midi volume is controlled by the slider on the form. The midi channel is set on the Midi settings 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.

RD2000 OVERVIEW

The basic building blocks of RD2000 sounds are Tones. There are 1458 tones available in total. There are OS built in sounds, 6 free Axial expansions and one Vpiano expansion. They can be edited with the Vpiano editor for modelled pianos. Supernatural Piano editor, Tonewheel organ editor and Other tones editor.



Each internal Zone contains one tone. Each zone can have tremolo, amp simulator and modulation added. As well as Reverb and Delay send levels. These are Zone Effects.



A collection of Zones is a Program/Scene. There are up to 8 Zones available. The program can have EQ, compression added, delay and reverb added. These are System Common / Program Common effects. There are 300 programs in 15 banks = A-O with 20 in each. Scenes are basically programs that can be assigned to the Tone buttons 0-9 on the RD for quick recall. You can save up to 100 scenes.

I recommend using the Zones as follows :-

- Zones 1 to 4 for internal RD tones. RD Midi in Channels 1-4 by default. Red LED.
- Zones 5 to 8 for external tones from a hardware or software instruments using the RD as a midi controller. RD Midi out channels 1 to 4 by default. Green LED

There are 3 main hardware setups I use with the RD2000 :-

1. RD2000 only. See User Tips and Tutorials 3, 4 & 6
2. RD2000 with a second Keyboard connected. Tutorial 5
3. RD2000 Option 2 above and a computer for recording and/or using VSTs'. Tutorials 1, 2 & 7

MIDI ROUTING

Note that if you are using USB it is Midi class compliant in Windows and MacOS.

Midi In RD2000

Using Midi cables & USB. System edit / system - p33 Parameter manual.



RD2000



If USB Midi Thru is not enabled then midi in will just go to the RD2000. ie. The RD2000 will react to Midi In.

If USB Midi Thru is enabled then midi in is output as Midi Thru at the USB Thru and Midi Din Ports Out 2 of the Rd2000 (Assuming Midi Out 2 is set to thru)
Note the RD2000 will not react to Midi in.



Midi Out / Thru RD2000

Midi Out 1 Din port will always output the RD2000 data.
Midi Out 2 can output RD midi out OR RD Midi thru if enabled.
USB midi out will output just the RD2000 data.
USB midi thru will output midi data received at RD2000 midi input if midi thru enabled.

AUDIO ROUTING

Note that if you are using USB audio, it is not Midi class compliant in Windows and MacOS. So you will need to load the vendor drivers on your computer and set the Rd2000 to vendor driver. P33 Parameter manual.

Audio Input to the RD2000

1. Analog signals sent to the 3.5mm analog input will not be routed to the USB audio out. There is no analog to digital converter in the RD.
2. Analog audio input, rhythms and songs will be mixed with the RD2000 audio at the analog audio XLR, 1/4inch outs and headphone out.
3. USB Audio in if enabled will be mixed with the RD2000 audio at the analog audio XLR, 1/4inch outs and headphone out.



RD2000



Audio Output of the RD2000

1. XLR L/R analog outputs
2. $\frac{1}{4}$ inch L/R analog outputs TR
3. Headphones $\frac{1}{4}$ inch TRS
4. Sub Outs - which take the analog data before sympathetic resonance, delay, reverb, EQ and compressor effects are applied.
5. USB digital audio from RD2000 if enabled using the USB Vendor driver for a Mac or PC will be output by USB. But will not include analog audio in - p26 & p33 Parameter manual to change settings USB audio

EDITING THE RD2000 SETTINGS



Above is a view of the RD2000 screen and some of its controls. When you use the software, you generally don't need the RD2000 screen. In fact, when you edit settings using the software the RD screen will probably be showing a different page. It does not matter, because both the screen and the software are just viewing different parts of the Temporary Memory settings bitmap. That is what you are editing.



10110111100101010000101001100101011010.....
RD2000 settings bitmap
.....101110101000101010

RD Screen showing this parts settings



My favourite function on the RD is using 'Shift' and turn a knob or press a button or move a fader and its screen will go straight to the editing page for the knob, or button or slider.

To save your own starting Program for the One Touch button - Hold down the RD **WRITE** button and press 'One Touch' button. Click OK. NB. The name will be set to the Tone name not the Program Name. The Tone Buttons 1 to 9 on the right double up as Scene buttons. So you can quickly recall a program or form a Set List.

When you finish any editing, you must **WRITE** the Program on the RD using its **WRITE** button or it will be lost when you power down.

CREATING A PROGRAM

This is how you create a Program! See also Tutorial 8.

Tones - The basic sounds - Best to use Zones 1 to 4 as required

Edit Tones using Tone designer - V-Piano, S/N-Piano, Organ or Other

Set Reverb and Delay send levels if required per zone

Add amp or sim effects for tones other than V-Piano per zone

Set any controller settings such as damper, swell, mod wheels etc



Program - a collection of up to 8 Tones - I recommend

Zone 1 to 4 - contain different internal tones

Zone 5 to 8 - different external tones - such as a hardware instrument or VST and set up controller settings -assign knobs etc

Write the Program - Name with up to 16 characters



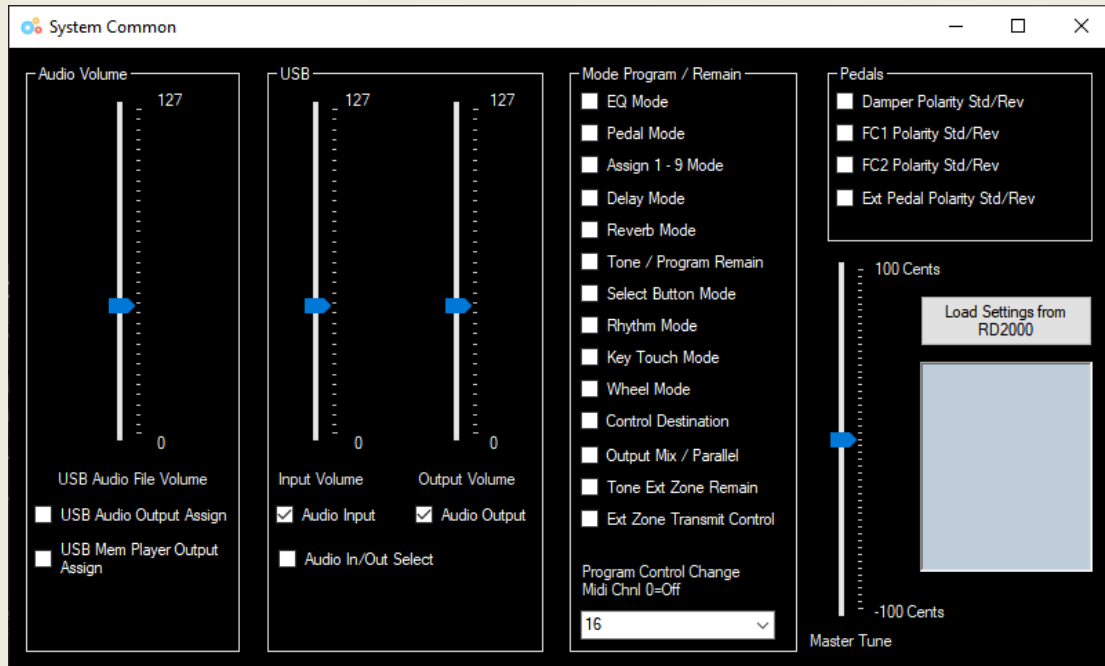
Final processing

Set up Equaliser settings and Compressor as required.

You can save a program as a scene - assign to a Tone button with a Scene Memo with up to 32 characters

SYSTEM SETTINGS

SYSTEM COMMON SETTINGS



These settings are common to all zones. See Parameter manual pages 22 to 26.

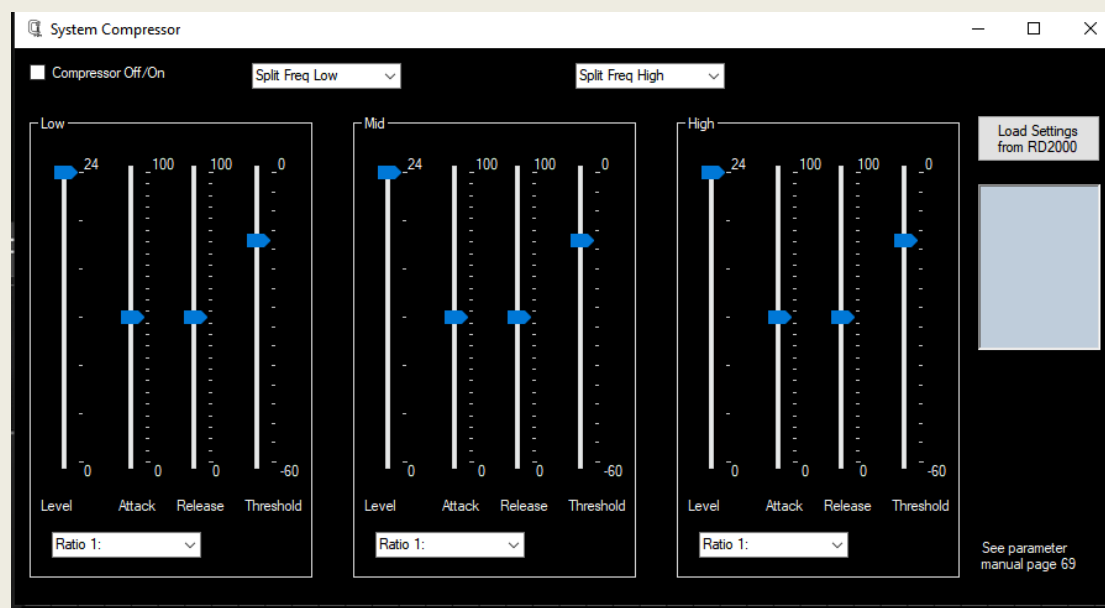
1. If you record a song on a USB drive the playback volume is controlled by the first slider.
2. USB audio input/output volumes are the next two sliders. Enable audio in/out with check boxes.
3. Audio in/out specified whether the RD volume control affects input or output volume for USB audio.
4. Program remain is a set of settings where you can fix the setting so that if you change programs the setting stays the same. Otherwise the default settings are used for the program.
5. The program control change specifies which channel the program change *CC* message is sent on. Normally 16 (Off = 0 and Midi channels 1 to 16)

6. The Master Tune slider affects the whole instrument and can be varied by +/- 100 Cents.
7. Damper polarity is needed if you use another brand pedal. Eg. Korg pedals are reverse polarity to Roland pedals.

To Load Settings from the RD2000 click the Button 'Load Settings from the RD2000'. The incoming sysex dump is displayed in the big text box and the controls will be updated.

Note. Midi in and out has to be set to the RD2000 for the request to dump can be sent and the dump received.

SYSTEM COMPRESSOR



The system compressor is applied at the output of the RD and is not specific to any zone. I normally don't compress audio unless I'm recording. See page 69 Parameter manual for details on each setting.

1. The check box turns the compressor On/Off.
2. The split Frequency changes where the Low to Mid and Mid to High boundary is in Hertz.
3. The Level slider sets the output level of the compressor 0 to 24db - one slider for the three ranges.
4. The Attack and Release times specify how quickly the compressor acts or switches off.
5. The Threshold sets where compression is applied -60 to 0 db.
6. The Compression Ratios sets the amount of compression from 1:1 to Infinity. 1:1 is unchanged. Infinity always reduces the output to the threshold.

You can download the current Compressor settings by clicking on the 'Load settings from RD2000 button'.

PROGRAM COMMON

PROGRAM LIBRARY

The screenshot shows a window titled "Program Library" with a table of programs and a search control panel below it.

| | Bank | No. | Prog. Name | MSB | LSB | Prog No. |
|---|------|-----|------------------|-----|-----|----------|
| | A | 1 | Solo Jazz Grand | 84 | 64 | 1 |
| | A | 2 | Honest EP Trem | 84 | 64 | 2 |
| | A | 3 | FC1 Cry Wah Clav | 84 | 64 | 3 |
| | A | 4 | Piano + ChoirPad | 84 | 64 | 4 |
| ▶ | A | 5 | Tine EP Menu | 84 | 64 | 5 |
| | A | 6 | 1979 Envelope EP | 84 | 64 | 6 |
| | A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| | A | 8 | Studio A Grand | 84 | 64 | 8 |
| | A | 9 | Phaser Bright EP | 84 | 64 | 9 |
| | A | 10 | 1975 EP Bumer | 84 | 64 | 10 |
| | A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |
| | A | 12 | Init | 84 | 64 | 12 |
| | A | 13 | Init | 84 | 64 | 13 |
| | A | 14 | Init | 84 | 64 | 14 |

Below the table is a search control panel with the following elements:

- Text: "Click on Row to select Program on RD2000 MSB / LSB / Prog No. - 1" followed by a text box containing "Tine".
- Buttons: "Search", "Clear Search", "Get Current", and "Find Current ?".
- Checkbox: "Use RD2000 default Program Change Control Midi Channel 16" (checked).

This feature enables the user to see the default program library. If the user creates programs on the RD this table will not be updated unless you follow procedures for creating Program Lists or downloading the program names by Midi. See later.

To set a Program on the RD2000 from this list just click on the Row.

If the user types a word in the white 'Search' box, the first occurrence moving down the list will be marked with a yellow background. Press 'Search' again to find the next occurrence which will also be marked in yellow again. See next image. Clicking on a row loads the program on the RD 2000. 'Clear search' clears the Yellow search results boxes, moves the caret to the first program and clears the search box. Current caret position in the list is coloured blue and searches are performed moving

down the list. The search is not case sensitive so searching for Piano will return Piano and piano. Note. By default the RD program Control Change Midi channel is set to 16. If you uncheck the checkbox the channel is determined by the channel slider on the midi form. Leave it checked unless you change the channel on the RD. Make sure you adjust the midi channel on the software to match the RD channel if unchecked. Note. Bank/Program change requests are Midi Control Change messages specific to the midi channel they are transmitted on. 16 by default on the RD.

'Init' means an Initialised Program - a place to store your own programs.

To get the Current Program Name of the Program loaded on the RD2000 click on the 'Get Current' button to retrieve it using Midi. The Program Name will appear in the blue text box. If you click on 'Find Current ?' and if the Program is found in the List it will be shown on the list highlighted in yellow.

| Bank | No. | Prog. Name | MSB | LSB | Prog No. |
|------|-----|------------------|-----|-----|----------|
| A | 1 | Solo Jazz Grand | 84 | 64 | 1 |
| A | 2 | Honest EP Trem | 84 | 64 | 2 |
| A | 3 | FC1 Cry Wah Clav | 84 | 64 | 3 |
| A | 4 | Piano + ChoirPad | 84 | 64 | 4 |
| A | 5 | Tine EP Menu | 84 | 64 | 5 |
| A | 6 | 1979 Envelope EP | 84 | 64 | 6 |
| A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| A | 8 | Studio A Grand | 84 | 64 | 8 |
| A | 9 | Phaser Bright EP | 84 | 64 | 9 |
| A | 10 | 1975 EP Bumer | 84 | 64 | 10 |
| A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |
| A | 12 | Init | 84 | 64 | 12 |
| A | 13 | Init | 84 | 64 | 13 |
| A | 14 | Init | 84 | 64 | 14 |

Click on Row to select Program on RD2000 MSB / LSB / Prog No. - 1 Tine Search

Clear Search

Tine Get Current

Use RD2000 default Program Change Control Midi Channel 16 Find Current ?

If you have saved a program of your own to a program location, then unless you have downloaded the program name list - see later - when you

click 'Find Current?' of your own program in temporary memory of the RD you will get a message saying "Could not Find Program Name in Default Program List". This is because the program list above is fixed unless you update it. It's the default program list. If you follow the procedures later and update the data then it will be found.

Sorting Data in a Column.

If you click on the column header you can sort the columns alphabetically and numerically. Click once on the column header to sort descending. Click the column header again to sort ascending.

- Clicking on Bank will sort the list alphabetically category by Bank.
- Clicking on Prognome will sort the Tones alphabetically
- Clicking on MSB or LSB or No. will sort numerically.

ADDING YOUR OWN PROGRAMS

When you open this form you see the default program list for the RD2000. However, over time you will create your own programs. To add them to the default database you add the programs you created to a text file. Each time you open the form you just click 'Load My Programs from File' button which synchronises this database with the RD2000.

| Bank | No. | Prog. Name | MSB | LSB | Prog No. |
|------|-----|------------------|-----|-----|----------|
| A | 1 | Solo Jazz Grand | 84 | 64 | 1 |
| A | 2 | Honest EP Trem | 84 | 64 | 2 |
| A | 3 | FC1 Cry Wah Clav | 84 | 64 | 3 |
| A | 4 | Piano + ChoirPad | 84 | 64 | 4 |
| A | 5 | Tine EP Menu | 84 | 64 | 5 |
| A | 6 | 1979 Envelope EP | 84 | 64 | 6 |
| A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| A | 8 | Studio A Grand | 84 | 64 | 8 |
| A | 9 | Phaser Bright EP | 84 | 64 | 9 |
| A | 10 | 1975 EP Burner | 84 | 64 | 10 |
| A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |
| A | 12 | Gus Piano 1..... | 84 | 64 | 12 |
| A | 13 | Gus Piano 2..... | 84 | 64 | 13 |
| A | 14 | Init | 84 | 64 | 14 |

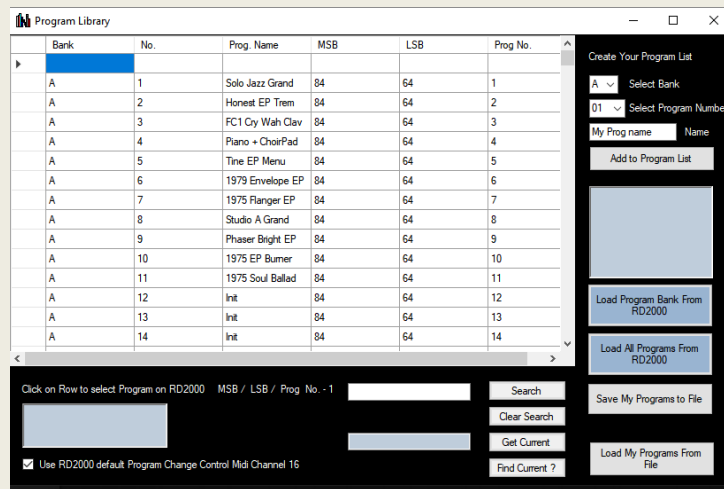
To create Your own program File use the Program Bank and Program number from the RD2000 screen for each program you want to add to the database:-

1. Select the Bank from the drop down menu A to O above.
2. Select the program number you want to save to from the drop down menu. 1 to 20.
3. Name the program. Maximum of 16 characters long. Any unused characters will be filled with full stops. Any name over 16 characters will be shortened to 16. Don't use characters * or \$ as these are used for Favourites and Set Lists. See later.
4. Click 'Add to Program List'. See above. I've added two pianos in 'init' slots. Gus Piano 1 in A 12 and Gus Piano 2 in A 13

When you finished the list click 'Save My Programs to File' button.

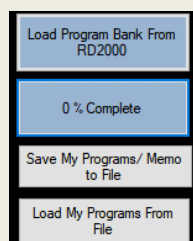
Next time you open the Program form just click the 'Load My programs from file' button. Note. When you change your own programs on the RD2000 just update your Program name list file. If you edit your programs on the RD just keep adding any program name updates to the end of the file. However, it is quicker downloading program names using Midi. See next!

LOADING PROGRAM NAMES BY MIDI



Instead of creating your own Program Lists manually one at a time you can download the Program names one Bank at a time using Midi from the RD2000. The bank to download is set by the drop down box at the top. A, B, C etc...Each bank takes around 5 seconds. You can add more than one bank before you save the file. Note you can stack Banks using this method. So download one bank. Then the next bank will be appended to the bottom of the text box.

Note. You can also download All Program Names (300) but it is very slow because of the limitations of how the RD2000 handles successive sysex messages and can take up to 90 minutes. Use the appropriate blue buttons to do these operations. The % complete is shown on the button. **Important.** Make sure your PC does not to let the USB Port 'sleep' otherwise you will lose your USB midi connection. On a PC - power options, advanced options - USB settings. On a Mac its 'System Preferences / energy saver'.



Important. Once downloaded use 'Save my Program to File' button. When you use the form again just click 'Load My programs from File'. Then the RD and the software names will match.

FAVOURITE PROGRAMS

You might want to have a list of favourite programs. Say you have a program you like called 'Piano 1. If you add a * to the start of the program name you can search by '*'. So choose Bank and program and add it to your Favourites list and call it say '*Piano 1...'. Do this for as many favourites as you want. Save your favourite program list to a file called say 'Favourites1'.

Now when you load your Favourites1 file just search for *. You can sort alphabetically by clicking on the header (Program Name) of the Program name column. This will show the Favourites in alphabetical order coloured green.

| Program Library | | | | | | |
|-----------------|------|-----|-------------------|-----|-----|----------|
| | Bank | No. | Prog. Name ▲ | MSB | LSB | Prog No. |
| | A | 2 | \$2 Piano 2..... | 84 | 64 | 2 |
| | A | 3 | \$3 Piano 3..... | 84 | 64 | 3 |
| | A | 5 | \$Stu 1 setlist.. | 84 | 64 | 5 |
| ▶ | A | 13 | *Gus Piano 2..... | 84 | 64 | 13 |
| | A | 12 | *Gus Piano 1..... | 84 | 64 | 12 |
| | A | 1 | *Piano 1..... | 84 | 64 | 1 |
| | A | 4 | *Piano 4..... | 84 | 64 | 4 |
| | I | 5 | +StrgsVelo>High1 | 84 | 65 | 37 |
| | K | 5 | +StrgsVelo>High2 | 84 | 65 | 77 |
| | A | 10 | 1975 EP Bumer | 84 | 64 | 10 |
| | A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| | B | 4 | 1975 M-Phaser EP | 84 | 64 | 24 |
| | B | 1 | 1975 Phased EP | 84 | 64 | 21 |
| | A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |

Click on Row to select Program on RD2000 MSB / LSB / Prog No. - 1 Search

*Gus Piano 2.....
 *Gus Piano 1.....
 *Piano 1.....
 *Piano 4.....

SCENE LISTS

Roland call these Scenes. Korg call them Set Lists.

The idea of a Scene is that during a performance you can quickly go from one program to the next, in the order of play, without having to manually dial in the specific programs. Scenes are the same as Programs, but they can also be assigned to the Tone buttons on the RD and have Memos describing the sound. The Memo is limited to 32 characters on the RD, but is unlimited in this software.

This feature is very similar to Favourites, except instead of a * you use a \$ followed by a number. 01, 02, 10, etc. The number defines the order of play. \$01, \$02 etc. This format is used as the start of the Scene List program name. The number after the \$ orders the programs. Remember to save your file called say Scene.txt and then click 'Load My Programs from File'. Then search for \$ and click header to list numerically.

To summarise, just rename your programs for example \$01 Piano 7.... by adding it to your Scene file. Rename another program to say \$02 Piano 2 etc. Save the file. Now open the file and search by '\$' Then click top of program name column to sort alphabetically with the Scene names in order of play \$01, \$02, \$03...etc. Finally save the file

The screenshot shows the 'Program Library' window with a table of programs and a sidebar for creating a scene list.

| Bank | No. | Prog. Name | MSB | LSB | Prog No. |
|------|-----|-------------------|-----|-----|----------|
| A | 1 | \$01 Piano 7.... | 84 | 64 | 1 |
| A | 9 | \$02 Piano 44.... | 84 | 64 | 9 |
| A | 10 | \$03 Piano 23.... | 84 | 64 | 10 |
| I | 5 | +StrgsVelo>High1 | 84 | 65 | 37 |
| K | 5 | +StrgsVelo>High2 | 84 | 65 | 77 |
| A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| B | 4 | 1975 M-Phaser EP | 84 | 64 | 24 |
| B | 1 | 1975 Phased EP | 84 | 64 | 21 |
| A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |
| B | 5 | 1975 UNI-V EP | 84 | 64 | 25 |
| D | 5 | 1978 ElectricPNO | 84 | 64 | 65 |
| A | 6 | 1979 Envelope EP | 84 | 64 | 6 |
| B | 2 | 1979 Sp Echo EP | 84 | 64 | 22 |
| L | 4 | 4-Space Ballad | 84 | 65 | 96 |

The sidebar 'Create Your Program List' contains the following elements:

- Select Bank: A
- Select Program Number: 10
- Name: \$03 Piano 23....
- Add to Program List button
- Preview list: A 01 \$01 Piano 7.... A 09 \$02 Piano 44.... A 10 \$03 Piano 23....
- Load Program Bank From RD2000 button
- Load All Programs From RD2000 button
- Save My Programs to File button
- Load My Programs From File button

At the bottom, there is a search bar with the text 'Click on Row to select Program on RD2000 MSB / LSB / Prog No. - 1 \$' and buttons for Search, Clear Search, Get Current, Find Current?, and Load Program Memo. A checkbox is checked for 'Use RD2000 default Program Change Control Midi Channel 16'.

Your Scene programs will now appear in order of play. Coloured Pink. See above.

\$01 Piano 7
\$02 Piano 44...,
\$03 Piano 23... etc.

Once you have created your Scene List you could then assign the Program to the Scene (Tone) Buttons on the RD.

To Register a Scene to a Tone button on the RD2000:

1. Press the Scene button.
2. Select a Tone button. If it is lit it's already been registered and will be overwritten.

To recall a scene on the RD2000

1. Hold down scene button
2. Press any Instrument type button which is lit.

MULTIPLE SEARCHES

| Bank | No. | Prog. Name | MSB | LSB | Prog No. |
|------|-----|-------------------|-----|-----|----------|
| A | 1 | *Piano 1..... | 84 | 64 | 1 |
| A | 2 | \$2 Piano 2..... | 84 | 64 | 2 |
| A | 3 | \$3 Piano 3..... | 84 | 64 | 3 |
| A | 4 | *Piano 4..... | 84 | 64 | 4 |
| A | 5 | \$Stu 1 setlist.. | 84 | 64 | 5 |
| A | 6 | Piano 4..... | 84 | 64 | 6 |
| A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| A | 8 | Studio A Grand | 84 | 64 | 8 |
| A | 9 | Phaser Bright EP | 84 | 64 | 9 |
| A | 10 | 1975 EP Bumer | 84 | 64 | 10 |
| A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |
| A | 12 | *Gus Piano 1..... | 84 | 64 | 12 |
| A | 13 | *Gus Piano 2..... | 84 | 64 | 13 |
| A | 14 | Init | 84 | 64 | 14 |

This shows three searches - by Name, \$ and *

- Normal Program Name search (Grand and then Piano) in yellow
- Favourites search in Green using an * before the Program name.
- Scene search in Pink using a \$ before the Program name.

The order of search sets the colour precedence.

When you save files you could have one called Scene1, another Favourites1 and another called My Programs. You can have as many text files as you want.

PROGRAM AND SCENE MEMOS

On the RD2000 you can have a 32 character memo associated with a Scene. On this software you can create text notes of any length to remind you about the details of a Program/Scene or the song its used for. See below the text in the big blue text box on the right.

| | | | | | |
|---|----|------------------|----|----|----|
| A | 1 | Solo Jazz Grand | 84 | 84 | 1 |
| A | 2 | Honest EP Trem | 84 | 64 | 2 |
| A | 3 | FC1 Cry Wah Clav | 84 | 64 | 3 |
| A | 4 | Piano + ChoirPad | 84 | 64 | 4 |
| A | 5 | Tine EP Menu | 84 | 64 | 5 |
| A | 6 | 1979 Envelope EP | 84 | 64 | 6 |
| A | 7 | 1975 Flanger EP | 84 | 64 | 7 |
| A | 8 | Studio A Grand | 84 | 64 | 8 |
| A | 9 | Phaser Bright EP | 84 | 64 | 9 |
| A | 10 | 1975 EP Bumer | 84 | 64 | 10 |
| A | 11 | 1975 Soul Ballad | 84 | 64 | 11 |
| A | 12 | Init | 84 | 64 | 12 |
| A | 13 | Init | 84 | 64 | 13 |
| A | 14 | Init | 84 | 64 | 14 |

Select Bank: A

Select Program Number: 01

My Prog name: Name

Add to Program List

A 15 This program uses the Swell pedal to control cut off frequency

A16 This program uses the VPiano layered wit strings in Zone 2

Load Program Bank From RD2000

Load All Programs From RD2000

Save My Programs to File

Load My Programs From File

Click on Row to select Program on RD2000 MSB / LSB / Prog No. - 1

Search

Clear Search

Get Current

Find Current ?

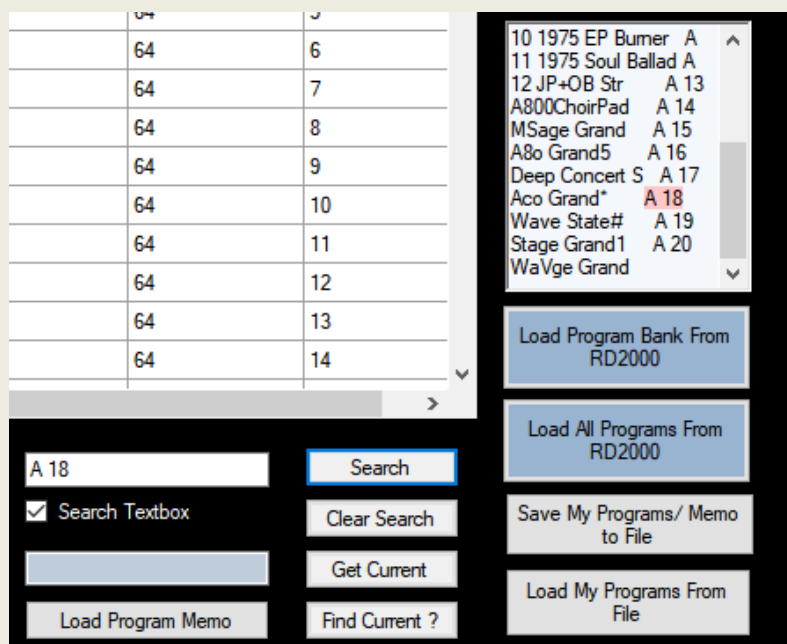
Load Program Memo

Use RD2000 default Program Change Control Midi Channel 16

To create a Program / Scene memo:-

- Type any amount of text in the big blue text box. You can use copy/cut/paste keyboard shortcuts here too. Ctrl C, Ctrl X and Ctrl V.
- I suggest you name Programs such as A08 followed by as much text as you need. Or \$A08 for a Scene. You can then easily search.
- Click on 'Save My Programs to File' button and call it say Memo1.
- To Load, click on 'Load Program Memo' button and Load the file you named as say Memo1

SEARCHING MEMOS OR ANY TEXT



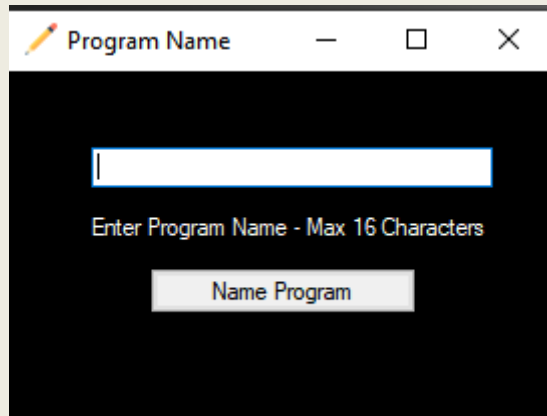
Apart from searching the program data base grid you can also search in the large text box on the top right. This is useful for searching Program and Scene Memos (see next section) or any text in the text box especially if you have a lot of text.

To do this Check 'Search Textbox'. Press 'Search' and the first instance of the Text in the Search textbox will be highlighted in Red. Press again to find a second instance. If one is not found an information box will tell you 'No More Instances Found'. Note this search is case insensitive. So if you search for Piano both 'Piano' as well as 'piano' will be found.

You can search by Name, any word or Bank/Program see the example image above I've searched for 'A 18'. Useful if you are looking for that Programs memo. But you can search for any text.

The 'Clear Search' button moves the search start position to the beginning, clears the red highlights and clears the Search Text Box.

PROGRAM NAME

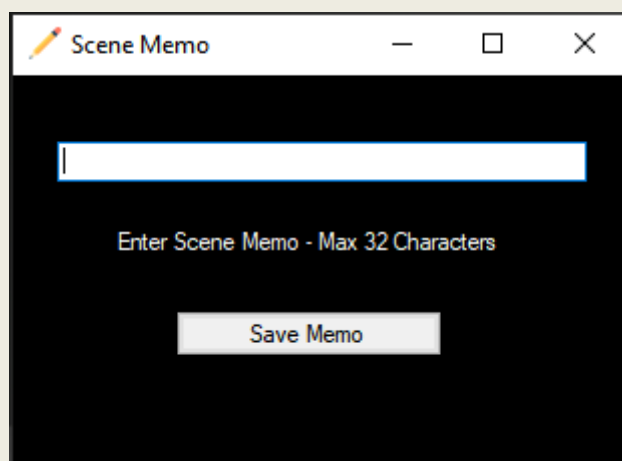


The image shows a software dialog box titled "Program Name". At the top, there is a title bar with a pencil icon on the left and standard window control buttons (minimize, maximize, close) on the right. The main area of the dialog has a black background. In the center, there is a white rectangular text input field. Below the input field, the text "Enter Program Name - Max 16 Characters" is displayed in a light gray font. At the bottom center, there is a white button with the text "Name Program" in a light gray font.

When you **Write** a program to one of the 300 slots in user memory on the RD2000 you will be prompted for a location and a name - 16 characters maximum. Anything longer will be truncated to 16 characters. You can enter this on the RD using the scroll wheel and buttons. However, it's far quicker using the computer keyboard using this feature. So when prompted specify the bank and program position and send the program name using this form.

Remember you cannot **Write** a program using midi. You have to use the **Write** button on the RD2000 once you have edited a program.

SCENE MEMO



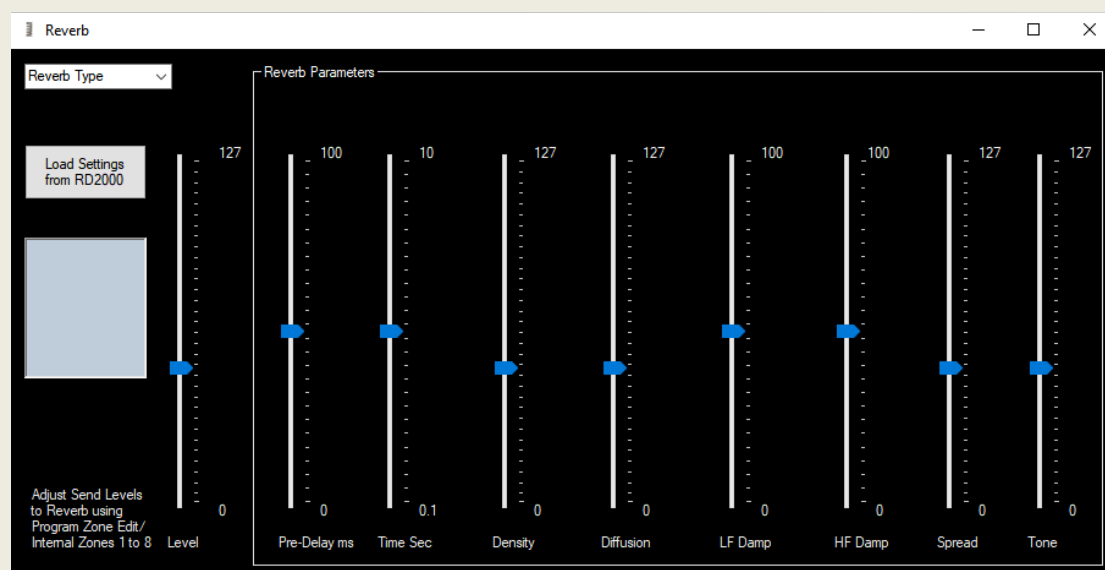
The image shows a software dialog box titled "Scene Memo". It has a dark background. At the top, there is a white text input field. Below the input field, the text "Enter Scene Memo - Max 32 Characters" is displayed. At the bottom center, there is a white button labeled "Save Memo". The window title bar shows "Scene Memo" and standard minimize, maximize, and close icons.

Scenes are very similar to programs. They contain one or more Tones and capture the setting on the instrument when the Scene was written. You can have up to 100 Scenes. There have two additional features over Programs: See Page 15 RD2000 Manual.

1. The ability to save a 'Scene' to a button on the RD2000 for instant loading. So the instrument type buttons can be set to a Scene. Great for live performances/set lists. So your order of play could use tone button 1 for first song, tone button 2 for second song etc.
2. The ability to add a 32 character memo to the scene to remind the player for instance what song the scene is used for during a performance. Whereas Program names have to be 16 characters long or less.

Entering 32 characters using the RD scroll wheel is slow. So once you **Write** a Scene to a location and are prompted for the Memo text, just type it on the computer using this form and press 'Save Memo'.

REVERB



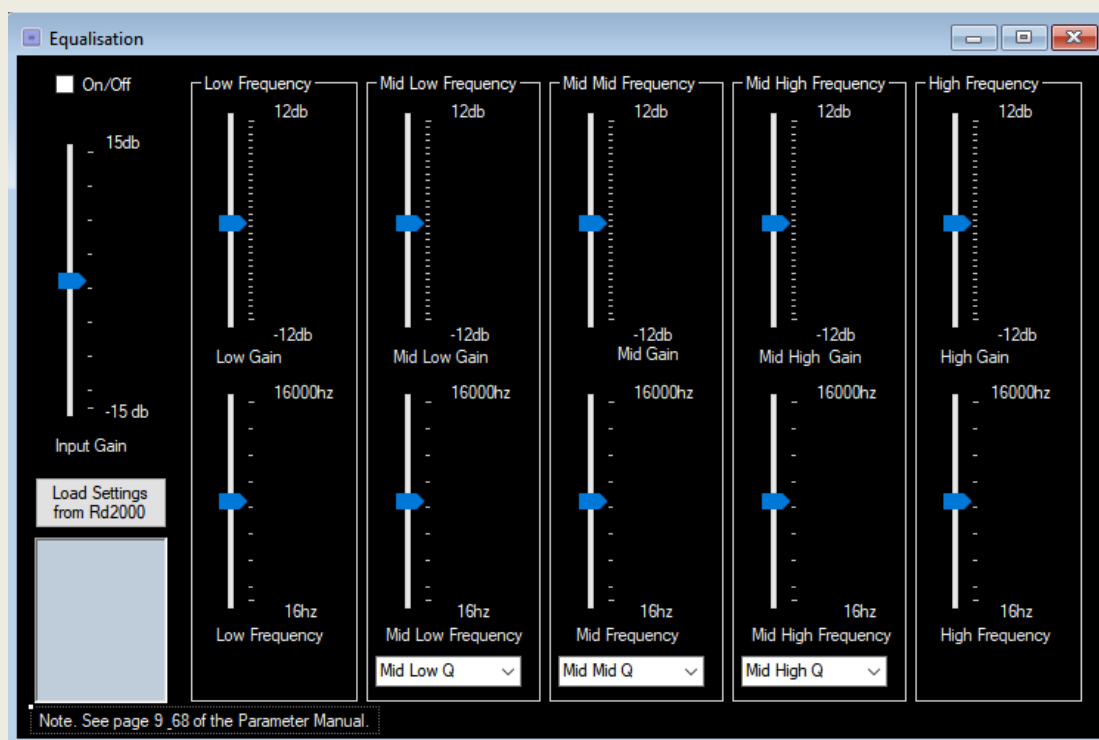
This form is used for editing the 5 reverb types. There is an overall reverb level which changes the length of the reverb, reverb type and 8 parameters associated with Reverb. Reverb is an effect applied to all Zones, but you can set the send level from each Zone separately in Program Common edit. See Parameter manual page 67 for specific details.

1. Drop down box sets reverb type. Room 1/2: Reverb that simulates the reverberation of a room Hall 1/2: Reverb that simulates the reverberation of a hall. Plate: Simulation of a plate echo (a reverb device that uses a metal plate)
2. Pre-Delay changes the time in milliseconds between the sound and when the reverb starts.
3. Time is the length of the reverb 0.1 to 10 seconds
4. Density changes the amount of reverb over time
5. Diffusion increases the density over time
6. LF & HF Damp adjusts the low/high frequency component of reverb
7. Spread adjusts the reverb spread
8. Tone adjusts the tone of the reverb

Remember. To set the Send levels from the Zones you want Reverb applied to in Program Zone Edit / Internal Zones form. If Send level set to zero you won't hear any Reverb.

If you click on 'Load Settings' the current settings on the RD2000 will be transferred to the software.

EQUALISATION



Here you can change how the audio level varies with frequency. Great for brightening up pianos or making sounds more mellow. The input gain boosts or cuts the input of the whole instrument. You can change the gain of the 5 frequency bands as well as the central frequency of the bands. Note the higher the value of Q the narrower the range of the frequency band. See Parameter Manual pages 9 and 68.

You can also download from the RD2000 its current settings for EQ by clicking on 'Load Settings from RD2000'. To do this make sure midi in and out on this program is set to RD2000.

DELAY



A delay effect is like an 'echo' where the sound gradually repeats and dies away.

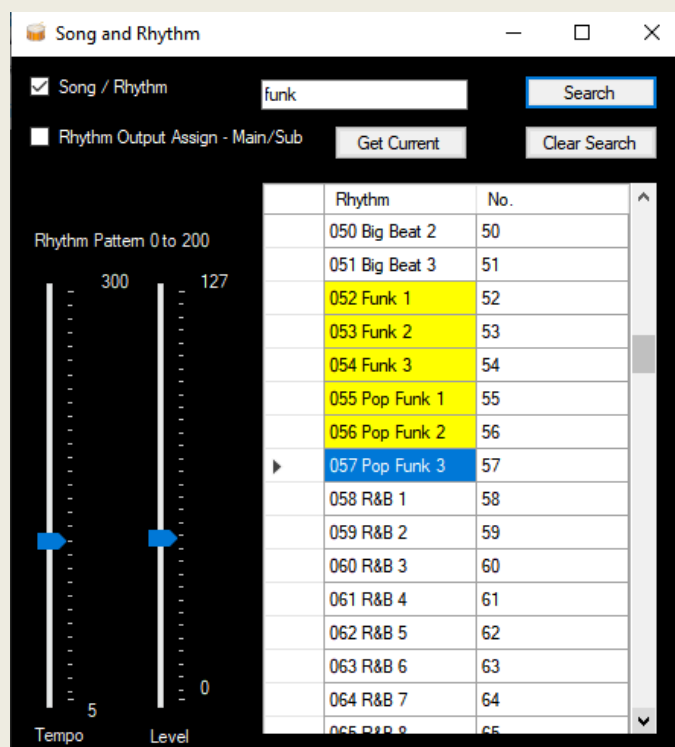
When you open the delay form there is no box of controls visible. Select delay type first. The box will appear with controls as above.

There are 5 delay types. You can switch the delay On and Off. Select the output. And decide if the effect remains when you switch programs. Finally a Level slider.

Within the box which appears once you choose delay type there are various parameters, different for each type of delay. See page 65 of the Parameter Manual.

Click the button 'Load settings from RD2000' to download the current programs delay settings.

RHYTHM / SONG



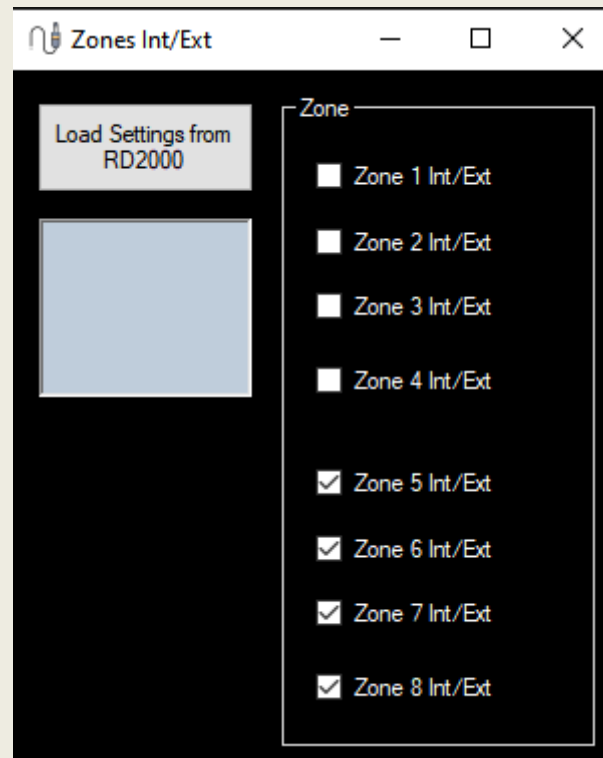
There are 200 Rhythms built into the RD2000. Great for practicing without a drummer. Rhythms can be sent to the Main outputs or the sub outputs. The Tempo, Level and Type can be chosen. It also outputs Midi so you can record the sequence. The RD contains 21 Drum Kits (Tones) but you can't change the kit associated with the built in rhythms, although you can play them using a midi sequencer or the RD keyboard.

To set the Current Rhythm on the RD2000 just click on the Row.

If the user types a word in the 'Search' box the first occurrence moving down the list will be marked with a yellow background. Press 'Search' again to find the next occurrence. See above example - search for 'funk'. Clicking on a row loads the Rhythm on the RD 2000. 'Clear search' clears the Yellow search results boxes, moves the caret to the first program and clears the search box.

Note if you use the RD on-board audio recorder it will NOT record the rhythm or any audio from the audio in jack. To load the current Rhythm settings and number click 'Get Current'. Remember. When finished clear search so the search starts from the top rather than the current caret position.

ZONES INTERNAL / EXTERNAL



This form allows you to turn a Zone to an Internal or External Zone.

Red light on RD = Internal Zone.

Green light on RD = External Zone

The example above shows the first 4 zones 1 to 4 set to internal and zones 5 to 6 external. Checking a box changes the Zone to External and unchecking changes the zone to Internal..

My recommendation is:

Use zones 1 to 4 for internal sounds. Midi channels 1 to 4 Midi in. Tremolo and Mod fx only work with these zones. Midi out channels 1 to 4 default if set as external zones.

Use zones 5 to 8 for external sounds such as a DAW / virtual instruments and hardware instruments. Zones 5 to 8 midi out channels 1 to 4 by default. Midi in channels 5-8 if internal zones default.

Note. Midi channel 10 is normally percussion. Midi channel 16 is the default program change channel. Zones 9 to 16 seem to be General Midi instruments but are not accessible from the RD.

To Load the Current Settings from the RD click the button 'Load Settings from RD'.

FOOT CONTROLLERS AND WHEELS

The screenshot shows a software window titled "Foot Controllers and Wheels Assignments". It contains three vertical sliders for "FC1 Function", "FC2 Function", and "Ext Function". Each slider has a "FC Range Min" and "FC Range Max" label at the bottom, with numerical values "0" and "127" at the ends of the scale. To the right, there are two dropdown menus for "Wheel 1" and "Wheel 2". Below these is a button labeled "Load Settings from RD2000" and a light blue rectangular area.

On this form you can assign the function of the foot controllers and the two wheels to Midi CC messages and what range of values apply. Note that the RD will only respond to certain CC values at its midi input and the controllers can only adjust certain parameters of the RD. See page 8 of the Parameter manual.

You can download the current RD2000 settings by clicking on the button 'Load Settings from RD2000'.

KNOB ASSIGNMENTS



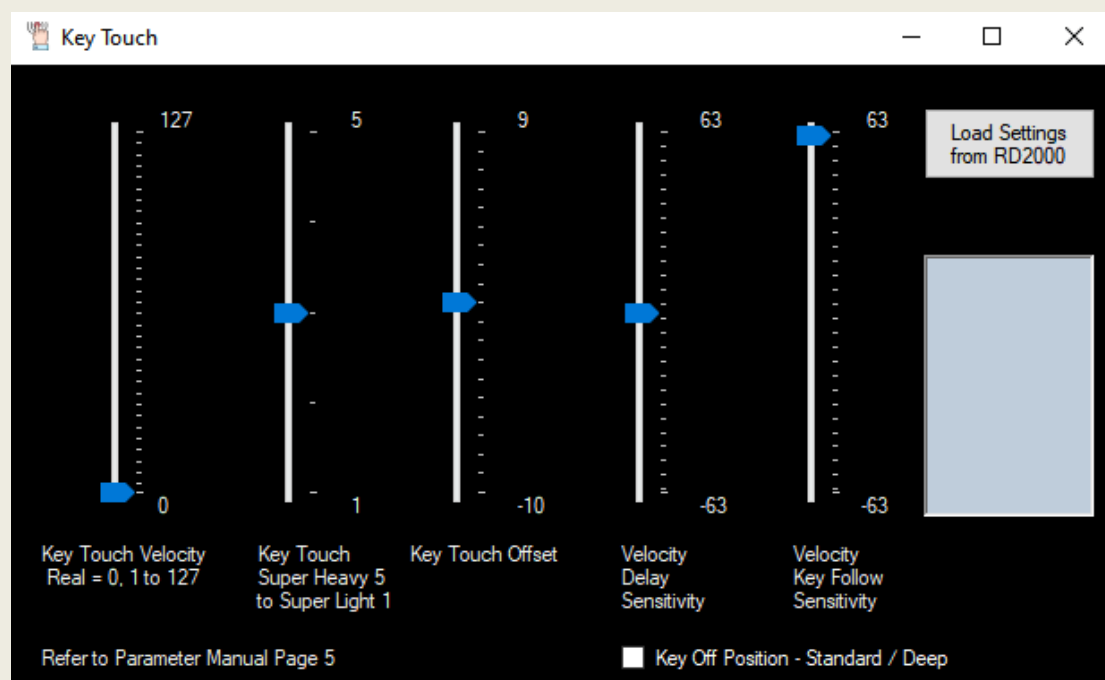
On this form you can assign the function of the RD2000 knobs for use in Assign Mode to Midi CC messages and control the range of the knobs. Note that the RD will only respond to certain CC values at its midi input and the controllers can only adjust certain parameters of the RD. See page 8 of the Parameter manual.

'The Load Settings from RD2000' button loads the current assignment map.

You can assign the knobs to CC 0 to 127 plus several other functions such as aftertouch, modulation depth and rate, tremolo depth and rate and amp sim drive.

The 'Set Knobs CC starting at' button is a quick way of setting the 8 knobs CC values sequentially. For instance, the soft controller assignments in Bitwig start at CC 20 and run to CC 27. The Korg Wavestate uses CC 24 to CC 31 for its default controller assignments. Native Instruments B4 ii CC 12 to 20 for upper drawbars.

KEY TOUCH



The sensitivity of the keys determines the volume and tonal quality of your performance. Concert pianists will have a much heavier and more refined touch than beginners.

This form allows you to modify the various parameters which the RD offers so you can match your playing style to the RD.

Summary of settings.

1. The Key touch velocity should be set to 0. Otherwise you will lose touch sensitivity and no matter how hard you play you will get a fixed velocity (volume) of the slider value.
2. A key touch of medium (3) is closest to an acoustic piano.
3. Key touch offset increases the how 'heavy' the touch sensitivity is.
4. Velocity Delay Sensitivity with lower values causes the sound to be delayed more when more force is used to play the keys. Higher values causes greater delay when less force is used.

5. Velocity Key Follow Sensitivity set at higher values causes the touch to become heavier in the higher registers and lower in the lower registers.
6. Key off as Standard (unchecked) replicates an acoustic piano. Deep is more suitable for electric pianos.

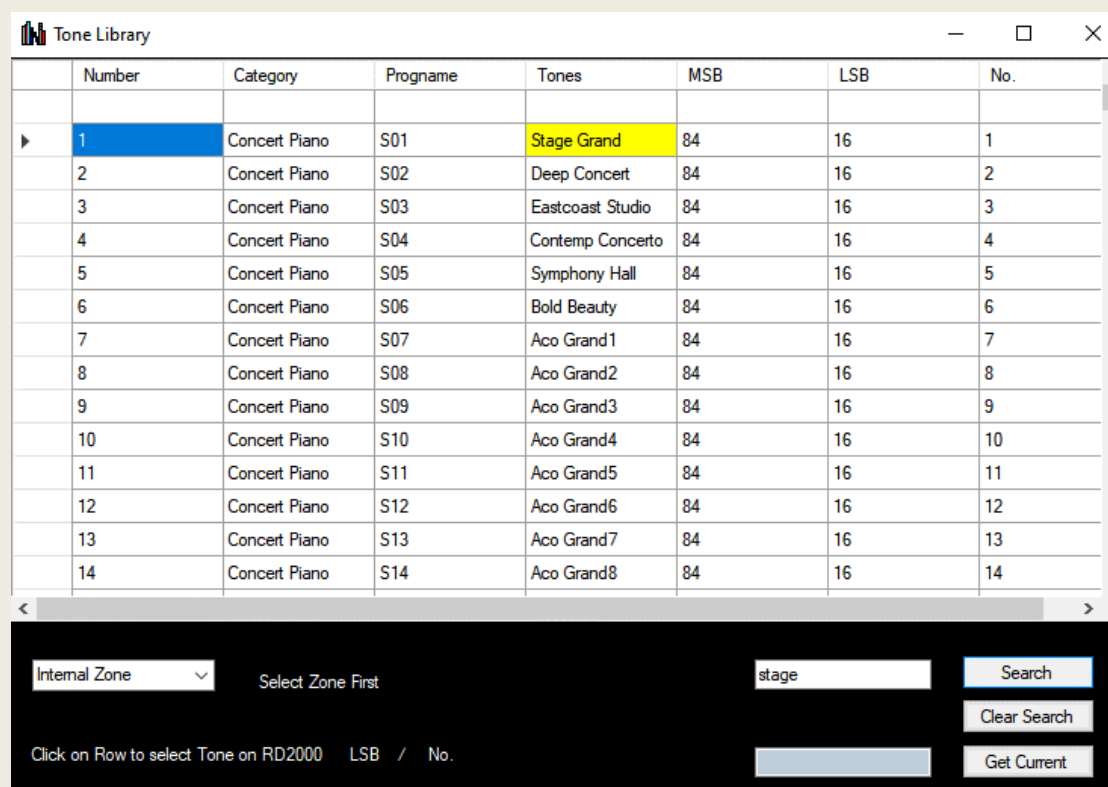
'The Load Settings from RD2000' button loads the current Key Touch settings.

You need to any settings you change and want to keep using the RD button otherwise they will be lost after you switch it off.

See page 5 of the Parameter Manual for details of what the settings do.

PROGRAM ZONE EDIT

TONE LIBRARY



The screenshot shows a window titled "Tone Library" with a table of tones and a control panel below it. The table has columns for Number, Category, Progame, Tones, MSB, LSB, and No. The first row is highlighted in blue, and the "Stage Grand" tone is highlighted in yellow. The control panel below the table includes a dropdown menu for "Internal Zone", a text input field for "stage", and buttons for "Search", "Clear Search", and "Get Current".

| Number | Category | Progame | Tones | MSB | LSB | No. |
|--------|---------------|---------|------------------|-----|-----|-----|
| 1 | Concert Piano | S01 | Stage Grand | 84 | 16 | 1 |
| 2 | Concert Piano | S02 | Deep Concert | 84 | 16 | 2 |
| 3 | Concert Piano | S03 | Eastcoast Studio | 84 | 16 | 3 |
| 4 | Concert Piano | S04 | Contemp Concerto | 84 | 16 | 4 |
| 5 | Concert Piano | S05 | Symphony Hall | 84 | 16 | 5 |
| 6 | Concert Piano | S06 | Bold Beauty | 84 | 16 | 6 |
| 7 | Concert Piano | S07 | Aco Grand1 | 84 | 16 | 7 |
| 8 | Concert Piano | S08 | Aco Grand2 | 84 | 16 | 8 |
| 9 | Concert Piano | S09 | Aco Grand3 | 84 | 16 | 9 |
| 10 | Concert Piano | S10 | Aco Grand4 | 84 | 16 | 10 |
| 11 | Concert Piano | S11 | Aco Grand5 | 84 | 16 | 11 |
| 12 | Concert Piano | S12 | Aco Grand6 | 84 | 16 | 12 |
| 13 | Concert Piano | S13 | Aco Grand7 | 84 | 16 | 13 |
| 14 | Concert Piano | S14 | Aco Grand8 | 84 | 16 | 14 |

Internal Zone Select Zone First stage Search
Clear Search
Click on Row to select Tone on RD2000 LSB / No. Get Current

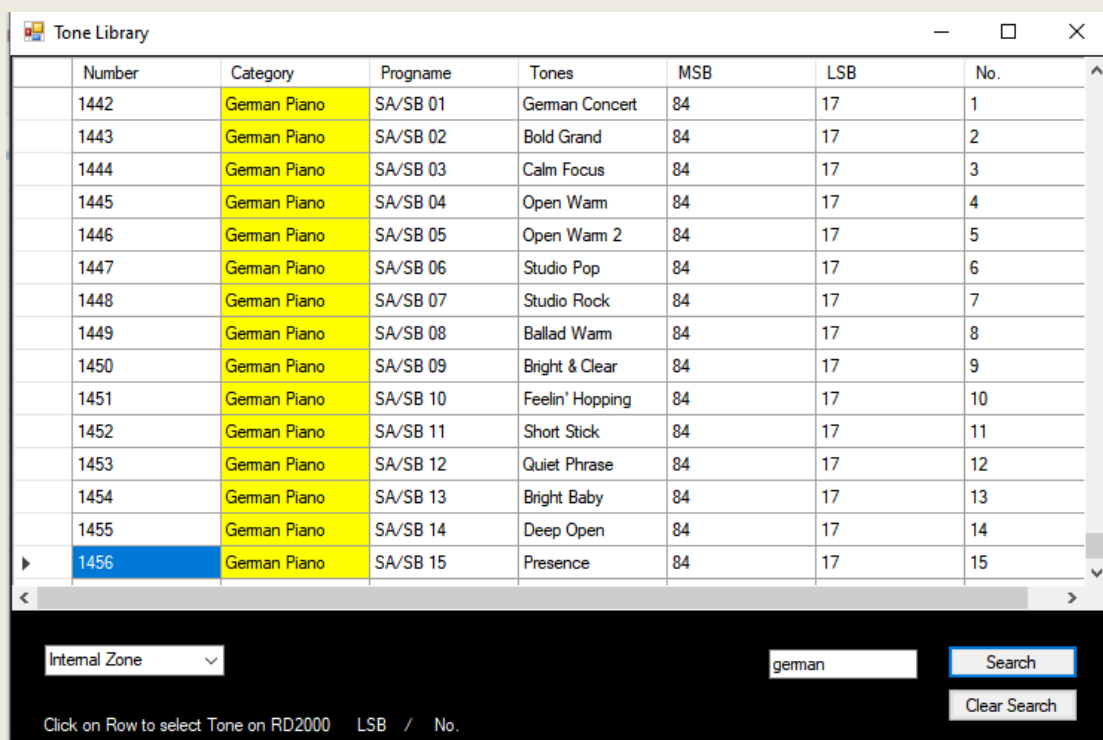
Tones are the 'fixed' sounds built into the RD. Currently there are 1458 tones available including the 6 axial expansions and the German Vpiano expansion. These Tones can be edited in a Program using the

1. Tone designer. ie. Vpiano editor, Super Natural editor, Tonewheel Organ editor and Other Tones editor.
2. Apply Zone effects such as Tone Colour, and for non VPiano tones - Modulation, Amp Simulator and Tremolo to each Zone
3. Send the signal to Delay and Reverb
4. Stack tones one in each of Zones 1-4 you create Programs.
5. You can then apply EQ and Compression to the whole Program.

To set a Tone on the RD2000 from this list just select the Zone you want the Tone in and click on the Row

Searching for tones. If the user types a word in the 'Search' box the first occurrence moving down the list will be marked with a yellow background. Press 'Search' again to find the next occurrence. Clear search clears the Yellow search results boxes, moves the caret to the first program and clears the search box. The current position is shown in blue. All of the free Axial supernatural expansions are included but are only accessible on the RD if you have the expansion loaded in the RD. The same applies for the German Vpiano expansion from Roland Cloud. Note that this has to be purchased from Roland as a lifetime license.

From Version 3 of the software the new German Vpiano engine tones are included in the list which provide a further 17 Vpiano tones. This piano is brighter and cleaner than the stock Vpiano and I recommend it. These 17 tones are added at the bottom of the list 1442 to 1458. Search by German will bring up first German Vpiano tone.



| Number | Category | Progname | Tones | MSB | LSB | No. |
|--------|--------------|----------|-----------------|-----|-----|-----|
| 1442 | German Piano | SA/SB 01 | German Concert | 84 | 17 | 1 |
| 1443 | German Piano | SA/SB 02 | Bold Grand | 84 | 17 | 2 |
| 1444 | German Piano | SA/SB 03 | Calm Focus | 84 | 17 | 3 |
| 1445 | German Piano | SA/SB 04 | Open Warm | 84 | 17 | 4 |
| 1446 | German Piano | SA/SB 05 | Open Warm 2 | 84 | 17 | 5 |
| 1447 | German Piano | SA/SB 06 | Studio Pop | 84 | 17 | 6 |
| 1448 | German Piano | SA/SB 07 | Studio Rock | 84 | 17 | 7 |
| 1449 | German Piano | SA/SB 08 | Ballad Warm | 84 | 17 | 8 |
| 1450 | German Piano | SA/SB 09 | Bright & Clear | 84 | 17 | 9 |
| 1451 | German Piano | SA/SB 10 | Feelin' Hopping | 84 | 17 | 10 |
| 1452 | German Piano | SA/SB 11 | Short Stick | 84 | 17 | 11 |
| 1453 | German Piano | SA/SB 12 | Quiet Phrase | 84 | 17 | 12 |
| 1454 | German Piano | SA/SB 13 | Bright Baby | 84 | 17 | 13 |
| 1455 | German Piano | SA/SB 14 | Deep Open | 84 | 17 | 14 |
| 1456 | German Piano | SA/SB 15 | Presence | 84 | 17 | 15 |

Internal Zone

Click on Row to select Tone on RD2000 LSB / No.

Selecting a tone on the RD. First specify the internal Zone using the drop down box labelled 'internal zone'. Remember Vpiano tones can only go to Zone 1. Then clicking on a row's first column sends the Tone number to the RD. The whole row will change colour to blue.

I recommend using :-

- Zones 1-4 for internal sounds (RD Tones) ie. A Program - Red LED

- Zones 5-8 for external sounds - by sending midi channels 1-4 the zone 5-8 default Midi chnls to external VST/hardware instruments. Green LED.

The screenshot shows a window titled "Tone Library" with a table of tones and a control panel below it.

| Number | Category | Programe | Tones | MSB | LSB | No. |
|--------|---------------|----------|------------------|-----|-----|-----|
| 1 | Concert Piano | S01 | Stage Grand | 84 | 16 | 1 |
| 2 | Concert Piano | S02 | Deep Concert | 84 | 16 | 2 |
| 3 | Concert Piano | S03 | Eastcoast Studio | 84 | 16 | 3 |
| 4 | Concert Piano | S04 | Contemp Concerto | 84 | 16 | 4 |
| 5 | Concert Piano | S05 | Symphony Hall | 84 | 16 | 5 |
| 6 | Concert Piano | S06 | Bold Beauty | 84 | 16 | 6 |
| 7 | Concert Piano | S07 | Aco Grand1 | 84 | 16 | 7 |
| 8 | Concert Piano | S08 | Aco Grand2 | 84 | 16 | 8 |
| 9 | Concert Piano | S09 | Aco Grand3 | 84 | 16 | 9 |
| 10 | Concert Piano | S10 | Aco Grand4 | 84 | 16 | 10 |
| 11 | Concert Piano | S11 | Aco Grand5 | 84 | 16 | 11 |
| 12 | Concert Piano | S12 | Aco Grand6 | 84 | 16 | 12 |
| 13 | Concert Piano | S13 | Aco Grand7 | 84 | 16 | 13 |
| 14 | Concert Piano | S14 | Aco Grand8 | 84 | 16 | 14 |

Below the table is a control panel with the following elements:

- A dropdown menu labeled "Internal Zone" with a downward arrow.
- The text "Select Zone First" next to the dropdown.
- A text input field containing the word "stage".
- A "Search" button.
- A "Clear Search" button.
- A "Get Current" button.
- Text at the bottom: "Click on Row to select Tone on RD2000 LSB / No."

To get the current tone. Select the Zone number then click 'Get Current' tone button. The current tone will be highlighted in yellow. In the blue text box you can see the MSB, LSB and Program number of the Tone.

Sorting Data in a Column.

If you click on the column header you can sort the columns alphabetically and numerically. Click once on the column header to sort descending. Click the column header again to sort ascending.

- Clicking on Category will sort the list alphabetically category by category.
- Clicking on Programe will sort the Tones numerically
- Clicking on Tones will sort the list alphabetically tone by tone.
- Clicking on MSB or LSB or No. will sort numerically.

ROLAND AXIAL EXPANSION SOUND LIBRARIES - FREE

Copyright Roland Corporation - [RD-2000 | Axial \(roland.com\)](http://www.roland.com)

| | |
|-------|--|
| EXP01 | Stage piano sound collection from legendary RD series. RD-EXP01 offers popular RD-500/600/700 sounds on RD-2000. Still those sounds are often heard by many popular hit songs from early 90'. |
| EXP02 | Stage piano sound collection from legendary RD series. RD-EXP02 offers popular RD-700SX sounds on RD-2000. In this 12 tones, you will find out familiar concert grand piano sounds and more. |
| EXP03 | Stage piano sound collection from legendary RD series. Followed by RD-EXP02, RD-EXP03 offers remaining RD-700SX sounds on RD-2000. In this 8 tones, you will find out several types of concert grand piano sounds and more. |
| EXP04 | Stage piano sound collection from legendary RD series. This RD-EXP04 offers RD-700GX and RD-700NX. In this 43 tones, you will find many useful piano sounds for your live performance and studio recording. Another great addition for your RD-2000. |
| EXP05 | Virtual Tone Wheel Organ collection features 31 types of various organ sounds. Newly added ROTARY Type 2 with version 1.5 firmware updates, this powerful collection is comparable with a dedicated combo organ keyboard. Use Wheel 2 or TONE COLOR knob to change rotary speed. To enjoy these organ sounds, please make sure your RD-2000 is updated to Version 1.5. http://www.roland.com/global/products/rd-2000/downloads/ |
| EXP06 | Carefully selected vintage synth collection features famous Roland JUNO-106, Jupiter-80, D-50 and more. In addition to Roland synthesizers, other famous vintage synthesizer sounds are included in this very special collection. 125 tones are ready for your own customized vintage synth sound library. Enjoy vintage synth sounds on RD-2000. Using MOD WHEEL 2, you can easily tweak sounds. To enjoy these synth sounds, please make sure your RD-2000 is updated to Version 1.5. http://www.roland.com/global/products/rd-2000/downloads/ |

GERMAN PIANO - VPIANO EXPANSION

| Number | Category | Progname | Tones | MSB | LSB | No. |
|--------|--------------|----------|--------------------|-----|-----|-----|
| 1442 | German Piano | SA/SB 01 | German Concert | 84 | 17 | 1 |
| 1443 | German Piano | SA/SB 02 | Bold Grand | 84 | 17 | 2 |
| 1444 | German Piano | SA/SB 03 | Calm Focus | 84 | 17 | 3 |
| 1445 | German Piano | SA/SB 04 | Open Warm | 84 | 17 | 4 |
| 1446 | German Piano | SA/SB 05 | Open Warm 2 | 84 | 17 | 5 |
| 1447 | German Piano | SA/SB 06 | Studio Pop | 84 | 17 | 6 |
| 1448 | German Piano | SA/SB 07 | Studio Rock | 84 | 17 | 7 |
| 1449 | German Piano | SA/SB 08 | Ballad Warm | 84 | 17 | 8 |
| 1450 | German Piano | SA/SB 09 | Bright & Clear | 84 | 17 | 9 |
| 1451 | German Piano | SA/SB 10 | Feelin' Hopping | 84 | 17 | 10 |
| 1452 | German Piano | SA/SB 11 | Short Stick | 84 | 17 | 11 |
| 1453 | German Piano | SA/SB 12 | Quiet Phrase | 84 | 17 | 12 |
| 1454 | German Piano | SA/SB 13 | Bright Baby | 84 | 17 | 13 |
| 1455 | German Piano | SA/SB 14 | Deep Open | 84 | 17 | 14 |
| 1456 | German Piano | SA/SB 15 | Presence | 84 | 17 | 15 |
| 1457 | German Piano | SA/SB 16 | Water Piano | 84 | 17 | 16 |
| 1458 | German Piano | SA/SB 17 | Low Lifted Concert | 84 | 17 | 17 |

Listed above are the 17 new German Piano - VPiano expansion sounds.

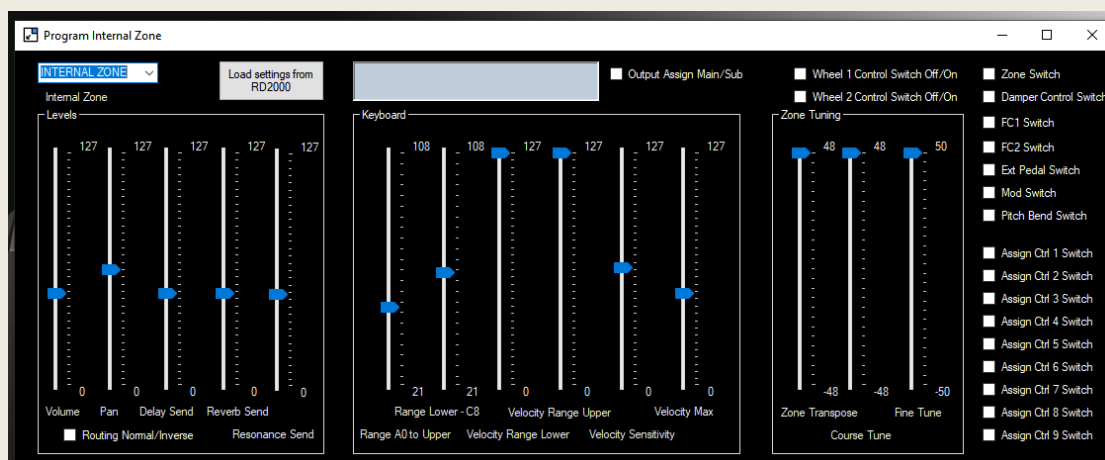
This expansion cost £149 and is well worth it! You can purchase it as a lifetime key from Roland Cloud. No subscription required. The 17 new tones are much brighter and clearer than the stock VPiano tones. They are based on a German Grand. It's not clear whether it's a Steinway or Bluthner. But it is my opinion an essential expansion to have.

You need to load Rd2000 firmware version 2.0 first and then load the expansion using an RD formatted USB stick in the USB update port - the one with the Rubber cover on the back of the RD.

Apart from brighter tones the Stretch tuning is greater than the original VPiano tones, but the Character and Level individual note voicings are more subtle. Representing a well maintained and tuned Grand piano.

This is loaded into one of the two new expansion areas A or B suggesting another expansion may be available later.

PROGRAM INTERNAL ZONE



On this form you can control various parameters associated with the how internal zones are set up on the RD2000. First, set the Zone you are working in using the combo-box at the top left. Zone 1 by default.

1. The first group box controls levels of the internal zone you have selected. Volume, Pan, Delay Send and Reverb Send. If you change the Send levels make sure the Reverb or Delay form has a volume set to > 0 otherwise you won't hear them.
2. The second group box has parameters for the RD keyboard.
3. The third is for tuning and transposing.
4. Finally the various switches can be assigned - On/Off.

To Load the Current Settings from the RD2000 click the button 'Load Settings from RD2000' button.

TREMOLO AND AMP SIMULATIONS



Ex. Rotary Speaker Type 2 Form shown above

Note. You cannot use Tremolo/Amp Simulations with the VPiano. Also they can only be applied to internal zones 1 to 4.

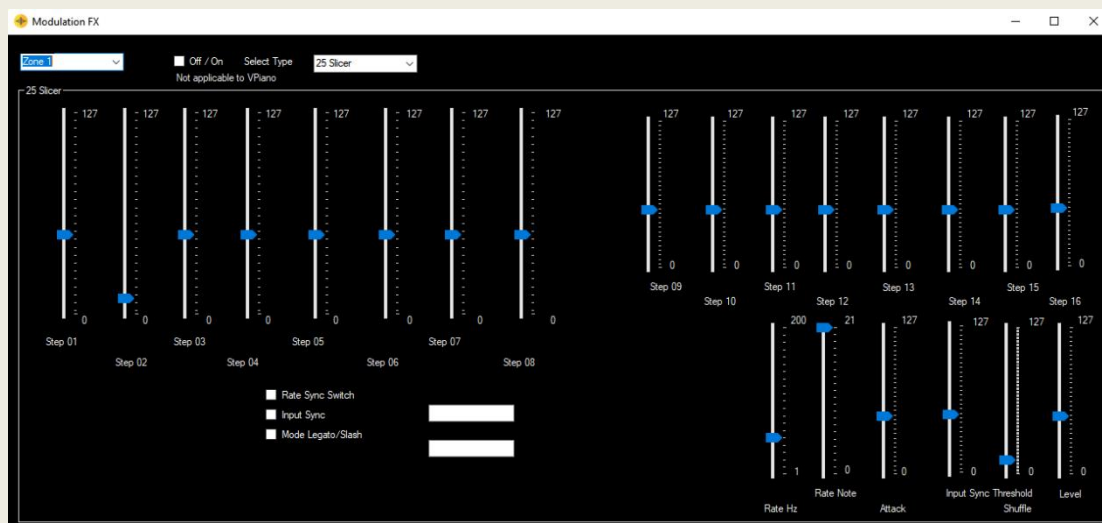
Currently there are 7 types of Tremolo effects and Amp Simulations, which include Normal, Acoustic Piano, E Piano, Guitar Amp, Rotary type 1, MKS 20 (Roland sound module tremolo effect) and Rotary type 2. The two types of Rotary speaker are Leslie speaker simulations. Speakers such as the Leslie 145, 147 and 122 are still widely used with Hammond Organs.

Firmware version 1.5 is required for Rotary 2. Each effect type has its own set of controls which are shown when the effect is selected.

Important - Select zone and then Tremolo type. Adjust the controls as required. See page 61 of the Parameter Manual.

You can download the current Tremolo settings by clicking on Load Settings from RD2000 **after selecting Zone and Tremolo type**. If you don't do that you will get an error message.

MODULATION EFFECTS



Note. You cannot use Modulation Effects with the VPiano. Also they can only be applied to internal zones 1 to 4.

The RD2000 has 62 effects. So far the following 20 have been included in this software. The sliders do not pick up the RD settings on this form, so the sliders, checkboxes and drop down boxes only read the same as the RD2000 once they are changed. Firstly select Zone 1 to 4, then the Modulation effect type you want. Try different effects until you get the one you like!

It has not been possible to include all Effects or download their settings from the RD2000 as there is insufficient information in the Midi implementation manual for this section.

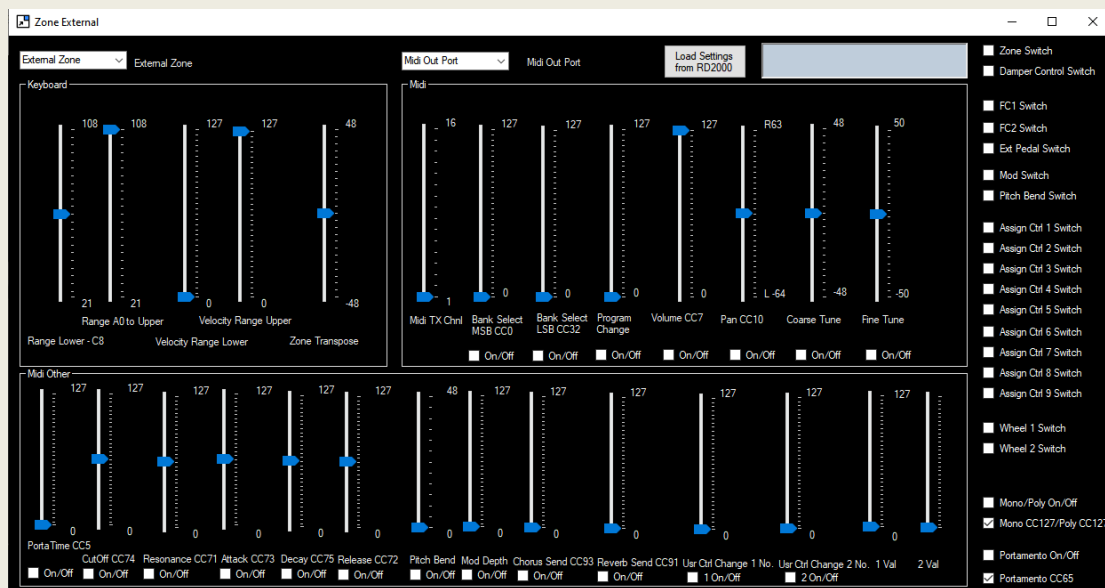
| | |
|----|---------------|
| 1 | CE-1 |
| 2 | SDD-320 |
| 3 | RE-201 |
| 4 | SBF-325 |
| 5 | UNI-V |
| 6 | SS PHASER |
| 7 | SCRIPT PHASER |
| 8 | CRY WAH |
| 9 | D-COMP |
| 10 | T-SCREAM |

| | |
|----|-----------------------|
| 11 | Equalizer |
| 12 | Enhancer |
| 14 | Step Filter |
| 15 | Spectrum (neutral) |
| 15 | Spectrum |
| 17 | Humanizer |
| 22 | Ring Mod |
| 25 | Slicer |
| 29 | Hexa-Chorus |
| 31 | Space-D |
| 46 | Bit Crusher |

TIP. To see the Mod FX editor on the RD2000 hold shift and turn a mod fx knob with zone effects button on.

See pages 34 to 60 of the Parameter Manual.

PROGRAM EXTERNAL ZONE



On this form you can control various parameters associated with external zones set on the RD2000. This enables you to control external midi instruments/VSTs'. To begin you specify the External Zone number. I normally use Zones 5 to 8 for External zones.

1. The first box adjust keyboard settings.
2. The second box controls midi information sent out of the external zone. Such as Bank change, Volume and tuning.
3. The third box at the bottom sets the various standard midi CC message values and whether they are active.

You can load the current settings for the zone you choose by clicking on the 'Load Settings from RD2000' Button.

Note. If you want to change the midi transmit channel (Midi TX Chnl) from its default value then specify the number. Zone 5 default is Midi out channel 1. Zone 6 Midi out channel 2 etc. You can also specify the RD Midi out ports - All, Out 1, Out 2 or USB.

If you want to save your settings after power down you have to Write the program on the RD to a program slot.

See pages 18 to 21 of the Parameter manual.

THE TONE DESIGNER

V PIANO EDITOR



Roland's V Piano technology first appeared in 2009 in their V-Piano a very expensive instrument and it is built into the RD2000. Roland's V-Piano does not use samples (recordings to make sounds) but mathematical functions to replicate strings being struck by hammers and the effect of a soundboard and damper pedal etc. The V-Piano is very expressive and has unlimited polyphony. All V Piano programs labelled MD. SN stands for supernatural (sampled) sounds. The V Piano is only available in Zone 1. RD firmware update 1.5 adds extra V pianos bringing a total of 17.

Firmware version 2.0 with the German Piano expansion bring the total to 34 tones with the two engines. This expansion can be purchased from the Roland Cloud.

The main differences between the RD V-Piano and the original V-Piano are that Unison Tune is not adjustable on the RD. Also the original V-Piano had 7 piano expansions in all, including Vanguard whilst the RD has 2. Vanguard is interesting as you could create futuristic piano sounds. Unison tune is where there are two or three strings per note, but you can't adjust the tuning difference between them on the RD. I suspect it's in the engine but not currently accessible. Maybe Roland could enable this with a Firmware update?

To use the editor, open the midi port on the RD2000 editor (midi in and out to the RD) software. Pick a V Piano program - zone 1 only. Moving the

sliders on the form above will change the V piano parameters on the RD. Moving the sliders up increases the value. Eg. Lid - raising the slider is like opening the lid of a grand piano. Refer to the Parameter manual for Details on what the various parameters do. The manual is available in the help menu as a pdf.

To load values from the RD, midi in and out must be set to the RD. So the request to dump the sysex file can be received by the RD and the data dump is sent back to the software from the RD.

To load the values directly from the RD click on the buttons - 'Load Tone colour from RD' and 'Load Rest of settings from RD'. The sliders will then move to the current values on the RD - ie the current program in temporary memory.

You can save the contents of the text box to the windows clipboard by clicking on the button "Copy to Clipboard".

You can also 'Load' and 'Save' the current RD values on the Form as a plain text comma separated file by Clicking on Load/Save Buttons. These are User Presets that can be shared with other users or stored by you for further use. These can be recalled using the Load Button. If you go to the Tone designer/piano designer on the RD, you will see the values being updated when the Load button is clicked. Note that successive sysex messages are sent 30 milliseconds apart from the PC so that the RD Midi buffer does not fill up. Loading all settings takes about 0.5 seconds.

See page 10 - 11 of the Parameter Manual for details of the Vpiano designer parameters and a summary is on the next page.

Note tooltips show slider values as you move them for all Tone Editor forms including Individual Note Voicing. See below.

VPIANO SETTINGS

| | |
|-----------------------|--|
| Tone Colour | Changes the timbre and stereo spread. This setting brightens the sound. |
| Lid | Raising the lid makes the sound brighter. |
| String Resonance | Strings for keys already pressed resonate sympathetically when another key is played. |
| Damper Resonance | When the damper is pressed strings of keys not struck also vibrate sympathetically |
| Hammer Noise | The loudness of the hammer striking the string |
| Duplex Scale | Sympathetic resonance in the non-damped parts of strings |
| Key Off Resonance | When a key is released this reproduces the subtle resonances which result. |
| Cabinet Resonance | The body resonance of a piano. This emulates the piano body resonating with the strings you play. |
| Sound Board Resonator | Higher settings produce a clearer resonance. This emulates the sound board resonating with the strings you play. |
| Damper Noise | The 'swoosh' noise when the damper is pressed. |
| Key Off Noise | The subtle sound when a key is released. |

Note. On the RD2000 you can also change settings on a per note basis for Tuning, Level (volume) and Character. These are stored as user presets. This software can create Level, Tuning and Character user presets - see later. The presets for Tuning which come with each model have been created by experienced piano tuners. But you can create some novel ones too.

VPIANO - QUICKLY COMPARING SETTINGS



Comparing different V-Piano settings quickly

If you want to quickly compare before and after changing settings on the V-Piano - Then:

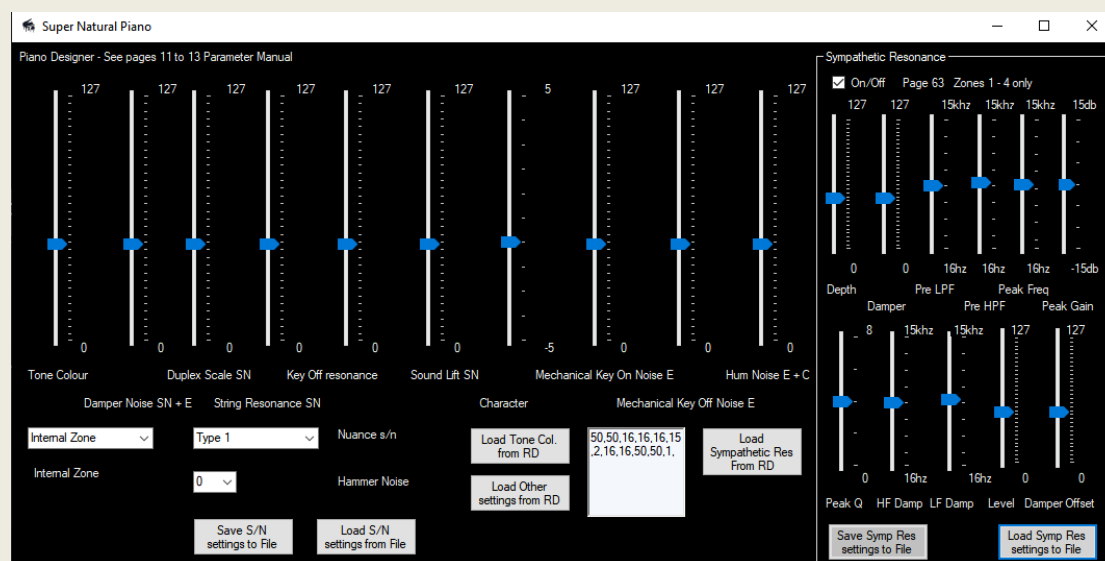
1. Save your initial settings - click on 'Save1' button
2. Change your settings - click on 'Save 2' button.
3. Then you can compare settings quickly by clicking between 'Load1' and 'Load2' buttons.

The current settings are not saved unless you click on the bigger 'Save' (to file on your PC) button. Note. When you close the program Save1 and Save2 settings will be lost.

Changing the V-Piano sound further.

1. Apart from the controls on the VPiano form,
2. You can adjust note by note - level, tuning and character.
3. You can add reverb and change the send level from the VPiano.
4. You can add delay and change the send level from the VPiano.
5. You can change key touch, velocity delay, velocity follow and offset plus other related parameters
6. You can layer the VPiano with Supernatural piano tones.
7. You can use the compressor to vary the dynamic range of the Program.
8. You can adjust the EQ for the Program - to brighten or soften.
9. You can pass the audio out through external effects - VST or hardware effects.

SUPERNATURAL PIANO EDITOR



Roland's super natural technology uses samples to create sounds. But it also uses other tricks such as smoothing the transition between layers to make the sound more realistic. The RD2000 has a subset of the sounds - supernatural pianos, ePianos and clavs - of the Integra 7 module. You can edit all of the parameters from the software.

A setting with SN after it is applicable to supernatural pianos

With e after it electric pianos

With c after it clavs

With nothing after it applies to all 3 types of piano

To load values from the RD, midi in and out in the software must be set to the RD midi out/in. This is so the request to dump the sysex file can be received by the RD and the data dump is sent back to this software from the RD.

If you have a supernatural piano loaded in the current program you can pick up the settings from the RD in the software.

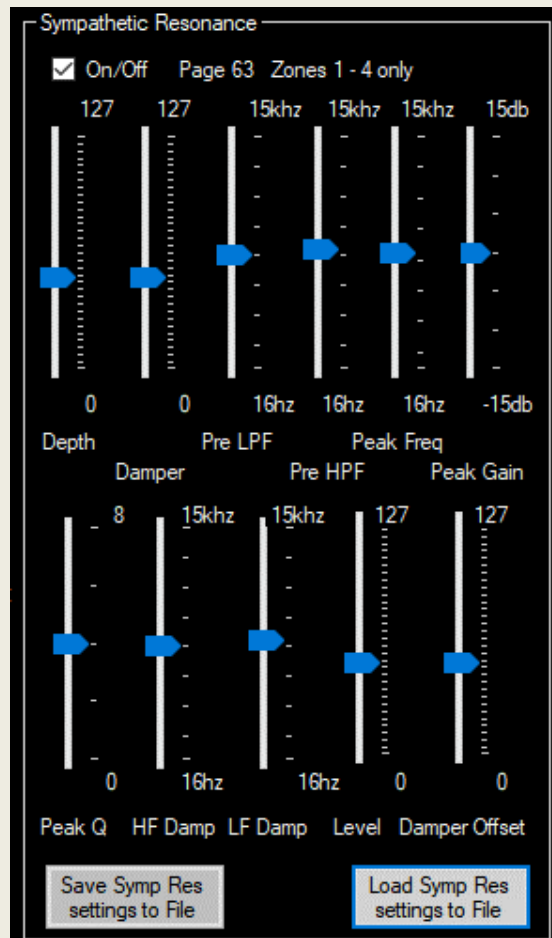
- Choose the zone the supernatural piano you want to load from the current program. By default zone 1
- Click 'Load Tone / Character' to see these settings in the software
- Click 'Load other settings from RD' to see the other values in this software.

If the dump is not successful or midi in and out are not set to the RD you will get an error message.

You can also Load and Save the current settings on the Form as a plain comma separated text file by Clicking on 'Save settings to File' Button. These are User Presets that can be shared with other users. These can be recalled using the 'Load Settings from File' Button. If you go to the Tone designer/S/N Piano designer on the RD, you will see the values being updated when the Load button is clicked. Note that successive sysex messages are sent 30 milliseconds apart from the PC so that the RD Midi buffer does not fill up. Loading all settings takes about 0.5 seconds.

See page 10 - 13 of the Parameter Manual.

SYMPATHETIC RESONANCE



When a damper pedal is depressed on a piano, all the 88 strings can vibrate producing a rich tone. This models that effect. It is not zone specific as it's a system common setting and only applies to supernatural pianos in zones 1 to 4 and applies only to certain tones.

Note there are 12 controls for this feature described in the Parameter Manual. These are included in this software. However, the midi sysex documentation actually details 28 settings?

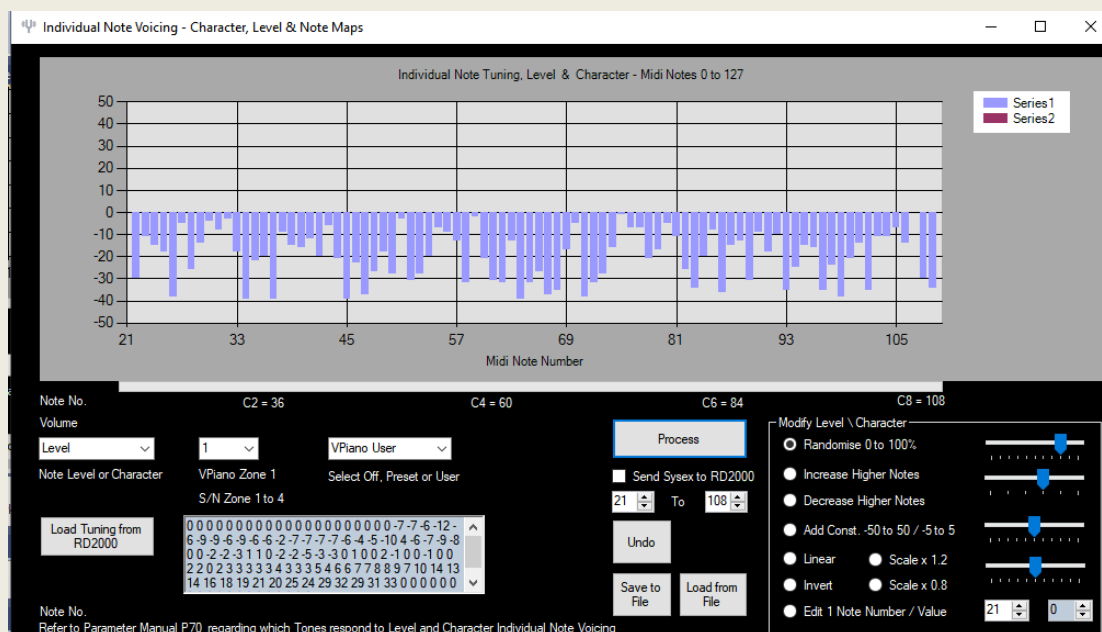
Click on "Load Sympathetic Res" to load the settings from the RD into this software,

You can also Load and Save the current settings on the Form as a plain comma separated text file by Clicking on 'Save settings to File' Button. These are User Presets that can be shared with other users. These can be recalled using the 'Load Settings from File' Button. If you go to the Tone designer/Sympathetic Resonance page on the RD, you will see the

values being updated when the Load button is clicked. Note that successive sysex messages are sent 30 milliseconds apart from the PC so that the RD Midi buffer does not fill up. Loading all settings takes about 0.5 seconds.

See page 64 of the Parameter Manual.

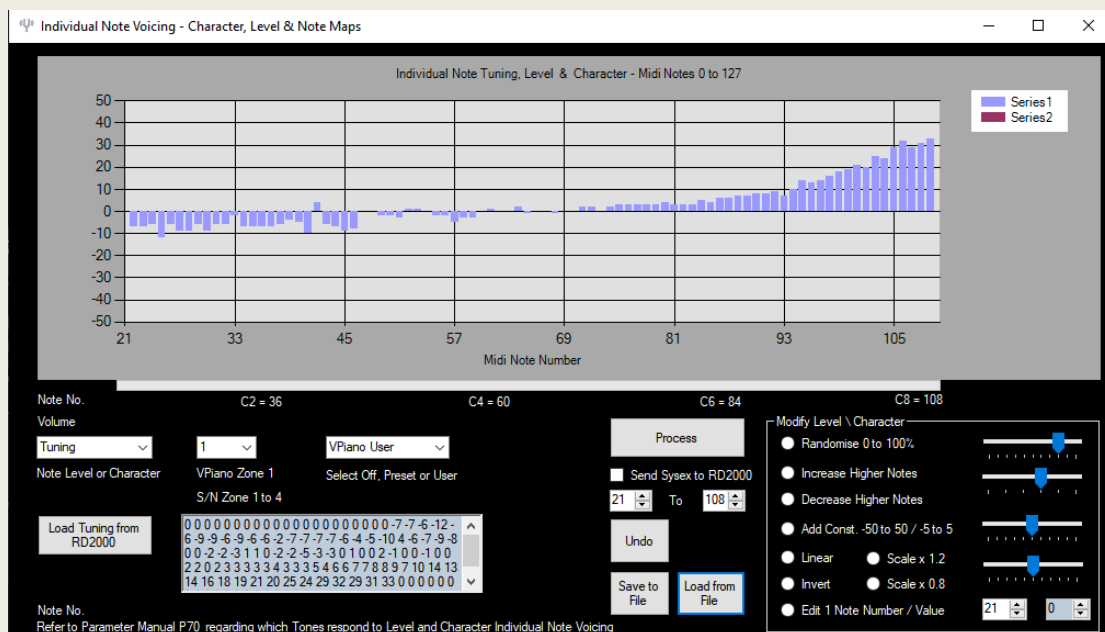
INDIVIDUAL NOTE VOICING - TUNING, LEVEL AND CHARACTER



An Example of Level (Volume) randomly mapped to each note

The RD2000 allows the user to adjust parameters for every individual note for certain piano type tones. This includes all of the V-Piano tones and many of the SN Piano, Clavs and E Pianos. These parameters are Tuning, Level (volume) and Character (timbre /brightness). Above is an example of the Level histogram. Each notes Level is randomly adjusted. Because real Pianos are mechanical instruments the key pressure to generate a given volume on any note varies and the timbre (Character) of each note is slightly different. You can generate a random distribution to give a more realistic sound. On the RD its very time consuming to do this by hand for the 88 notes. This software does it with a couple of mouse clicks. New Pianos or well-maintained ones will have a lot less variation in timbre and level between notes than older pianos.

TUNING is a specialist occupation so you can just use the RD2000 tuning profiles. Of course, you can create your own. The inbuilt ones all use stretch tuning to differing degrees. Above middle C the notes get sharper up to 30 cents at C8. Below middle C they become flat by up to -10 cents at C1. The stretch tuning on the German Vpiano is slightly larger. The tuning profiles on the RD have been set up by experienced piano tuners. However, each note can be tuned on the RD2000 as a User Preset. Note the 88 note RD2000 keyboard can access midi note numbers 21 A0 to 108 C8.

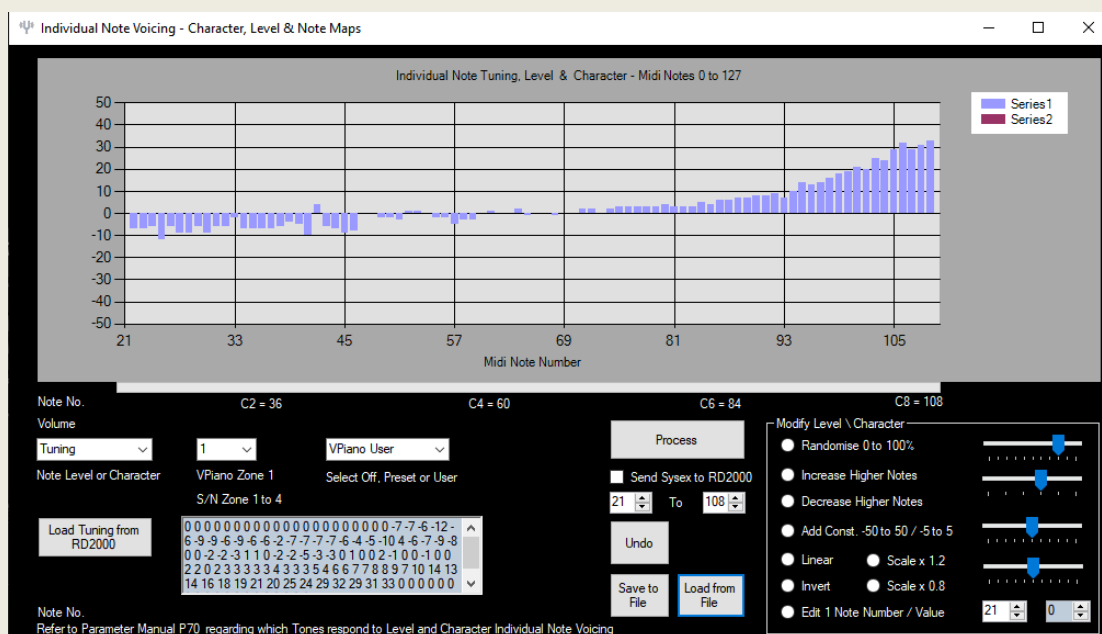


An example of Stretch Tuning on the RD2000
S01 VPiano Tone - Vertical Scale +/-50 Cents.

LEVEL parameter can give a more authentic feel but don't overdo note volume variations. The variations are quite random in the inbuilt profiles. Aim for a range between 0 and -20 max. Roland have not applied any to the German Vpiano presets. This can replicate varying felt hardness and mechanical resistance from note to note on an acoustic piano.

CHARACTER parameter has the biggest effect on the sound of the RD. The inbuilt profiles are again quite random. Values vary between +/- 5. On the German Vpiano they vary between -2 and +2. These replicates varying felt hardness and other mechanical variations note to note on an acoustic piano.

LOADING INDIVIDUAL NOTE TUNINGS FROM THE RD2000

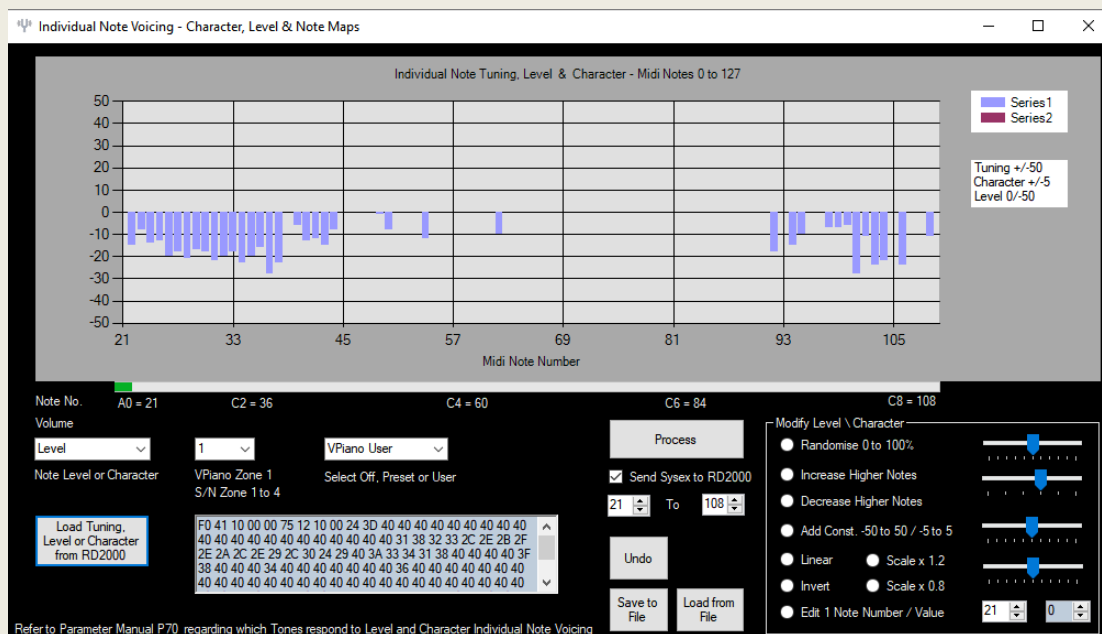


An example of Stretch Tuning on the RD2000
S01 VPiano Tone - Vertical Scale +-50 Cents.

1. Make sure Midi in/Out are both set to RD2000.
2. Select 'Tuning' from the drop down menu. It's the default at startup.
3. Click 'Load Tuning, Level or Character from RD2000' button. This can be either Preset (Prst) or User.
4. It will take less than 2 seconds to download the 88 note profile.
5. The Note Tuning on the RD is in Cents. +- 50 cents max. This is shown on the vertical axis on the graph.

Note you can download the tuning, Level or Character profile for any of the tones you use and Save it as a text file. Press the Save button. You can then reload it using the Load button and you can also apply it to other Tones. If you make any edits just save them too on your PC.

LOADING INDIVIDUAL NOTE LEVEL MAPS

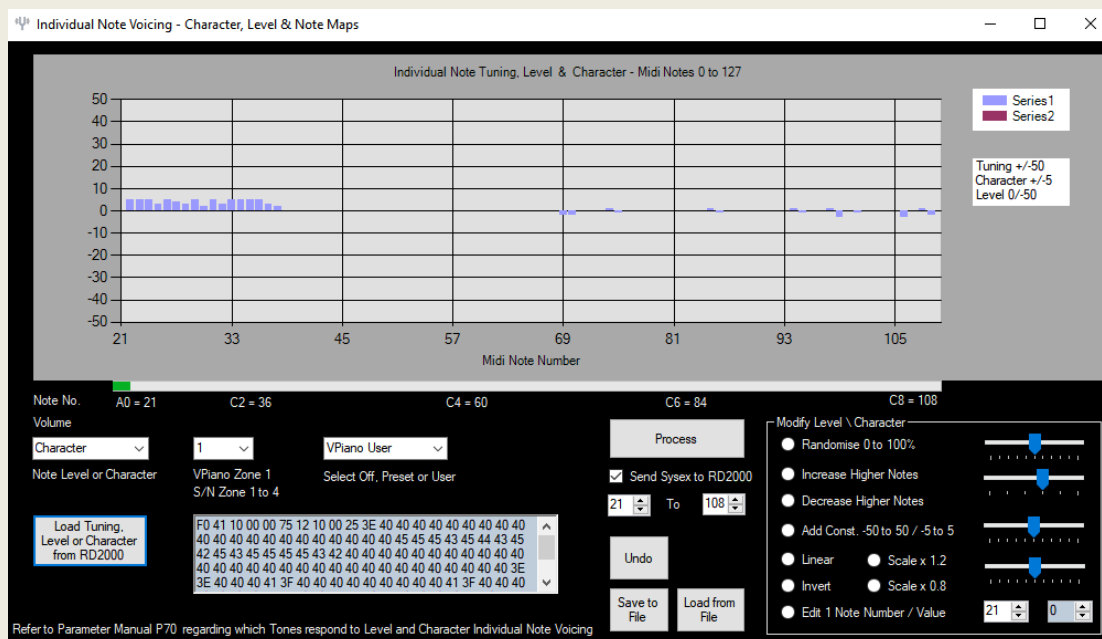


Above is the Note Level map for the S04 VPiano

1. Make sure Midi in/ Out are both set to RD2000.
2. Select 'Level' on the drop down menu
3. Click 'Load Tuning, Level or Character from RD2000' button. This can be either Preset (Prst) or User.
4. It will take less than 2 seconds to download the 88 note profile.
5. The Level offset on the RD is 0 to - 50max. This is shown on the vertical axis on the graph.
6. Note Some Pianos such as S01, S02 and S03 don't have any Level or Character maps assigned so will return 0 values.

Note. You can download the Tuning, Level or Character profile for any of the tones you use and Save it as a text file. Press the Save button. You can then reload it using the Load button and apply to another Piano. If you make any edits just save them too on your PC and reload later.

LOADING INDIVIDUAL NOTE CHARACTER MAPS

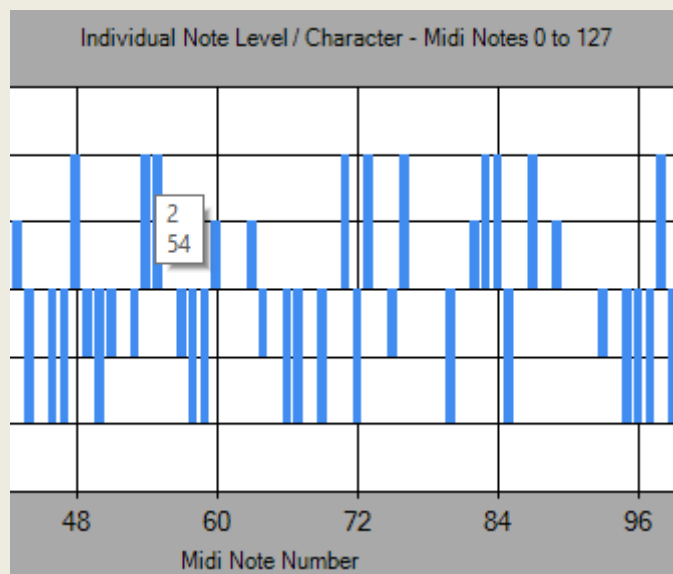


Above is the Note Character map for S04 VPiano Tone

1. Make sure Midi in/ Out are both set to RD2000.
2. Select 'Character' from the drop down menu.
3. Click 'Load Tuning, Level or Character from RD2000' button. This can be either Preset (Prst) or User.
4. It will take less than 2 seconds to download the 88 note profile.
5. The Character offset on the RD is +/-5 max. This is shown on the vertical axis on the graph.
6. Note Some Pianos such as the VPianos' S01, S02 and S03 don't have any Level or Character maps assigned so will return 0 values.

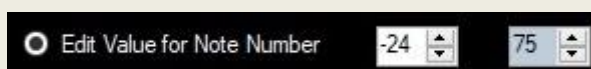
Note. You can download the Tuning, Level or Character profile for any of the tones you use and Save it as a text file. Press the Save button. You can then reload it using the Load button and apply to another Piano. If you make any edits just save them too on your PC and reload later.

INSPECTING VOICING VALUES



If you hover the mouse cursor over a bar on the chart a tooltip will show you the height of the bar - Tuning, Level or Character - and below on the next line the Midi note number. See image above for a Character Map. Showing Character amount 2, Midi note 54.

When you see a tooltip on the graph the values in the 'Edit Value for Note Number' updown boxes will be updated with the value for that note number. See image below. The left box is the value, the right box the Midi Note Number. This makes it quick to pick the note and edit single note values. Below in this example a value of -24 is assigned to note 75, which would be the same as the associated tooltip.

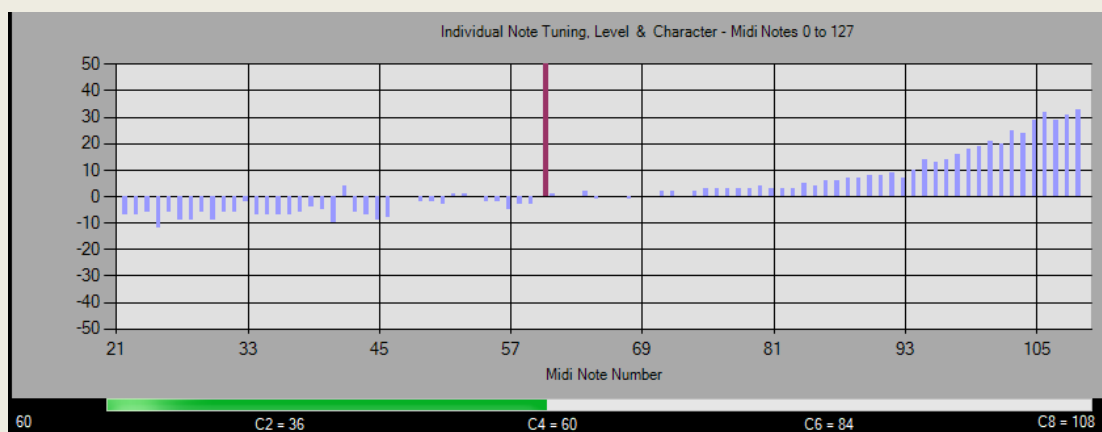


See next page and 'Edit One Note at a Time' section later.

SHOWING NOTES PLAYED ON THE RD2000

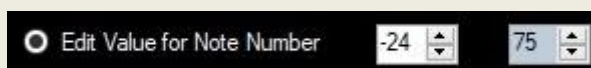
If you play a note the RD2000 keyboard a horizontal green progress bar shows the position of the note, 21 to 108. See image below. The Midi note number is also shown on the bottom left. In this case 60.

There is also a red marker which moves along the graph x-axis when you play a note on the RD keyboard to help you locate the position on the graph when editing sounds. This shows the last note played. See below.

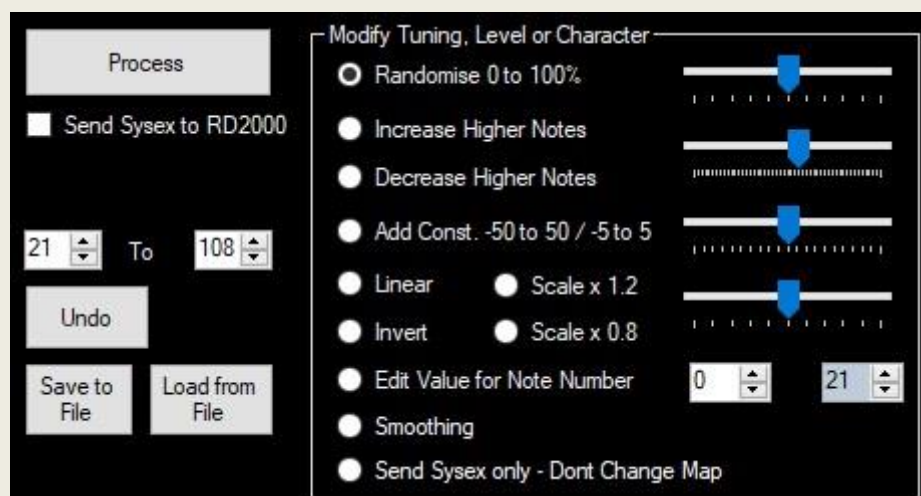


The Red column shows last Midi-in note played on RD2000. Any blue note column fractionally to the right of it is the same note number. The blue updown box for note number will show the note number of this last note played, unless you hover over a blue bar and its tooltip appears.

The white value box will also be updated. If the 'Edit Value for Note Number' radio button is selected, you can then adjust the note value updown box and press 'Process'. Playing the note again will audition the new value. This makes it easy to make to edit one note at a time.



EDITING THE NOTE TUNING MAP



If you downloaded a Note Voicing Map you can edit it. Or you can create your own from scratch. **Note. You cannot edit the preset (Prst) voicing maps. These are built into the RD2000. But you can edit and update the User Voicing maps. If you want to see the edits on the RD then just select User on the Tuning, Level or Character map screen on the RD.**

1. You can edit the Note voicing map without updating the RD2000 Make sure the 'Send Sysex to RD2000' checkbox is unchecked.
2. To just Send Sysex to update the RD2000 using the current Voicing Map without further processing just check 'Send Sysex Only - Don't Change Map' Radio button.
3. To carry on processing the Voicing Map without sending sysex Uncheck the 'Send Sysex to RD2000' checkbox
4. To Process the Voicing Map and also send sysex then Check the "Send Sysex to RD2000' checkbox and choose a processing Radio Button other than the 'Send Sysex Only - Don't Change Map' Radio button.

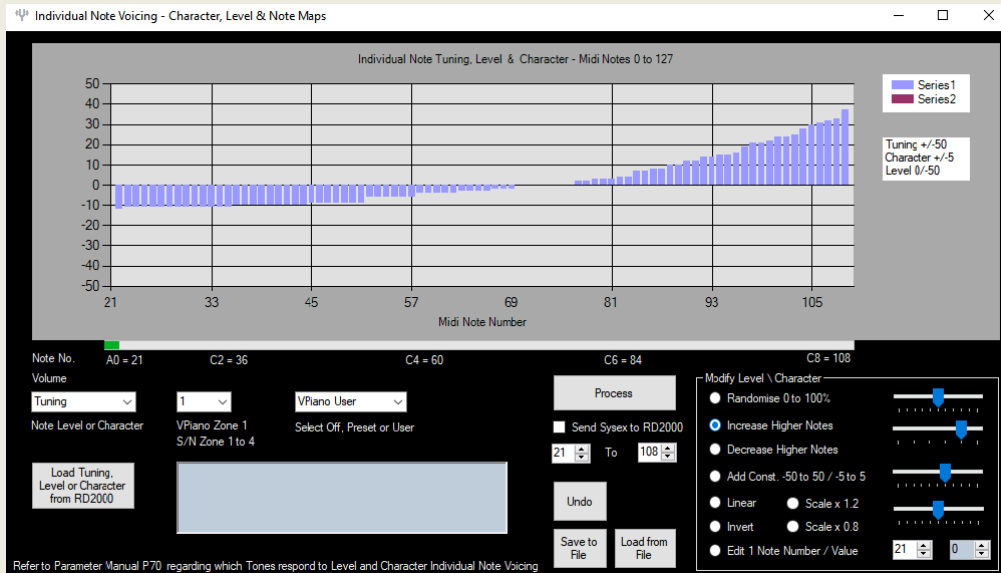
Editing Tuning Maps

- If you create a stretch tuning map from scratch, I suggest start off with applying a constant of -10 and then apply Increase Higher Notes. Then add a constant so you aim for 0 tuning adjustment around C 60.

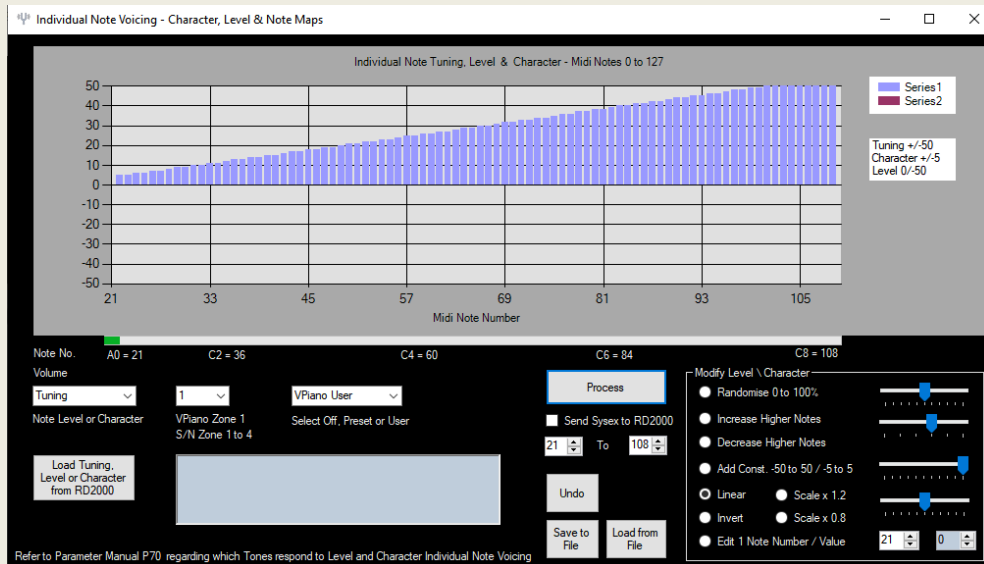
- Note. If you want to edit less than 88 notes just select the note range with the updown buttons you want to edit. Default 21 to 108.
- To increase or decrease higher notes in the existing array exponentially select the Increase/Decrease Higher notes exponentially Radio button between the two note number bounds selected at the bottom left of the form. This is useful for tuning maps particularly. Adjust the slider to the right to change the magnitude of the exp. function.
- Clicking on Randomise will add a series of random values to the existing Tuning Map. Adjust the slider to vary the amount of Randomisation to add to the Map between the two note number bounds selected at the bottom left of the form. More randomisation to the right, less to the left. Be subtle with this adjustment.
- Linear draws a straight line between the two note numbers with note bounds selected by the two updown buttons. Plus a constant of slider value. +-5. Default 0 added.
- Invert reverses the sign of the notes between the two note number bounds selected at the bottom of the form.
- Scale multiplies the array of notes between the two note number bounds selected at the bottom of the form. 0.8 or 1.2 times.
- Edit One Note number sets the value of the chosen note in the array to +- 50 cents for Tuning, +-5 for Character or 0 to -50 for Level. Useful to pin values for the Linear function too. Playing a key on the RD2000 will set the Note Number automatically. Now adjust the 'Value'. If 'Send Sysex to RD2000' is checked the pressing process will update the RD2000 with the new value for that note.
- Smoothing produces a rolling average of 3 note values.

To send the Tuning, Character or Level Map to the RD2000 check the checkbox 'Send Sysex to RD2000' which will just Send Sysex -the processing radio buttons will be unchecked. Then Press 'Process'. Once you have sent the data to the Rd2000 you have to Write the Program on the RD to save it in a vacant program slot if you want to save it.

Remember, you can 'Save' the Tuning Maps to a file on your PC and also reload (Load) them and apply to different Piano tones. Note. The stretch tunings loaded in the RD2000 can be edited or new ones created in the Note Tuning User memory. You can also experiment with totally new tuning methods! The Prst (Preset) note voicings on the RD cannot be overwritten, only the User Prst's.



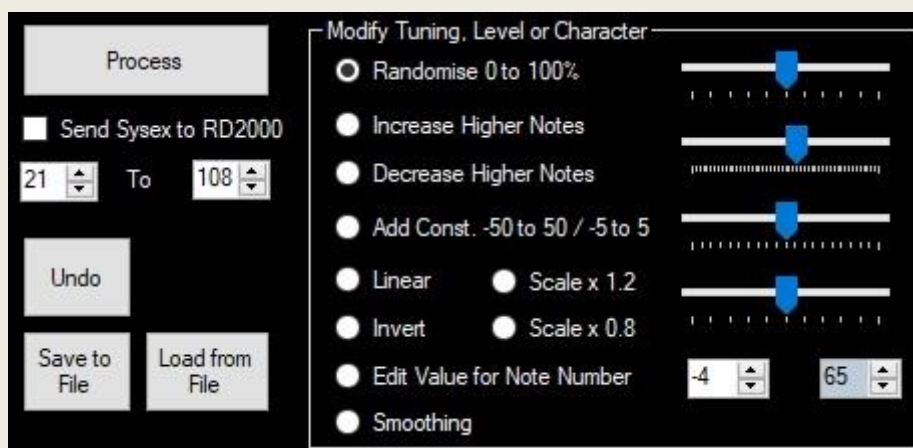
A Stretch tuning profile generated by Increase Higher notes exponential fn. Then add a constant of -10.



Above is an example of a linear operator applied to Note Tuning producing a novel profile - values 0 to 50 over note numbers 21 to 108. You would probably then add - 25 so the value at C 60 is 0.

Note. On the original V-Piano the tuning of the 3 or 2 strings per note could be adjusted individually. On The RD only the tuning of each note can be adjusted.

EDITING THE NOTE LEVEL & CHARACTER MAP



For Level and Character typically start off with an initial randomisation.

The 'Randomise 0 to 100%' Checkbox applies initial randomisation. Setting selected at Form load. 0% fills the array with zeros. Try different randomise slider positions.

If you want to Process a note Tuning, Level or Character array which you have created at Randomisation, then select one of the other Radio-buttons. This stops further randomisation and you can then stack processing steps. Press 'Process' to start each mapping. See following.

Sysex is only sent to the RD2000 if the 'Send Sysex to RD2000' checkbox is checked. Default setting unchecked. If you go to the RD2000 screen of Level, Character or Tuning you will see the settings sent from this program updating the screen from left to right on the graphs. You don't have to be on the screen of the RD for it to work,

RANDOMISE THE LEVEL FOR EACH NOTE

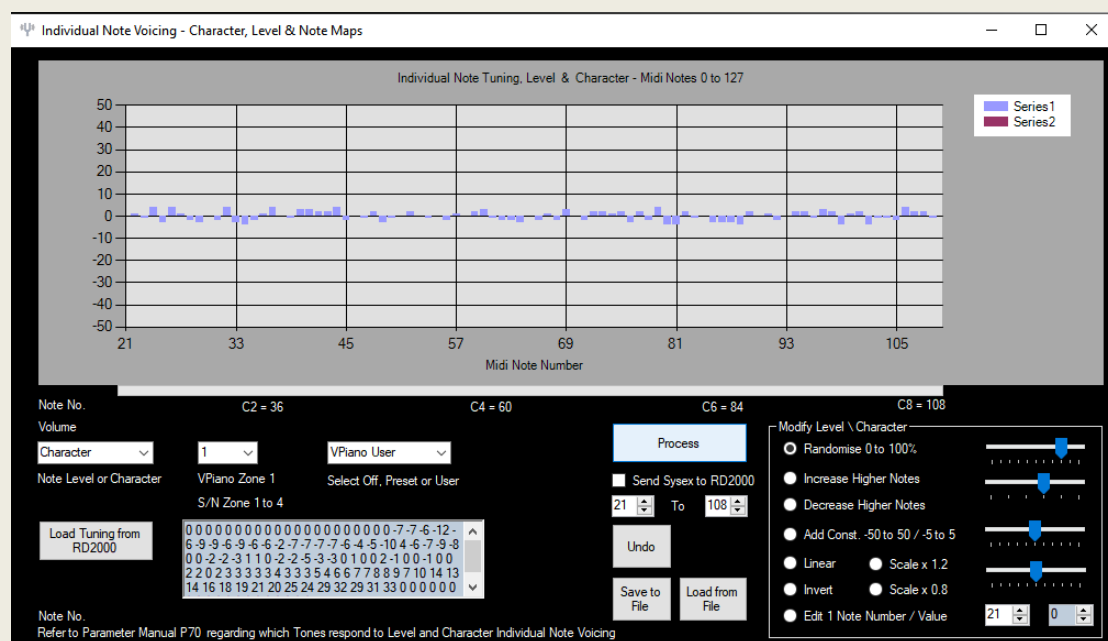
1. Select Tone Designer/individual note/ "User" voicing/Level on the RD2000 if you want to see the results on the RD screen as well.
2. In the software - Choose Zone the zone your piano tone is in - Vpiano is in zone 1 only. S/N Piano Zone 1 to 4.
3. Choose VPiano User or S/N Piano User in the drop down box
4. Choose Randomisation % of maximum value 0 to -50
5. Click 'Process'. Be subtle start at 20%

RANDOMISE THE CHARACTER FOR EACH NOTE

1. Choose 'Character' in the drop down box.
2. Click on individual note voicing/character/user on the RD2000 to see results on the RD screen as well.
3. Choose Zone the tone is in. Vpiano is in zone 1 only. Zone 1 to 4.
4. Choose Randomisation % of maximum value (5) -5 to 5 be subtle start at 70%
5. Click 'Process'.

For both Tuning, Character and Level if Send sysex to RD2000 is checked Sysex will be sent to the RD2000. To send the settings takes under 1.3 seconds. To save the Program once finished you have to 'Write' it on the RD2000 to a program slot.

Note. Not all tones respond to Tuning, Character and Level settings. Refer to Parameter Manual P70 to see which ones do.



An Example of Character mapped to each Midi note 21 to 108

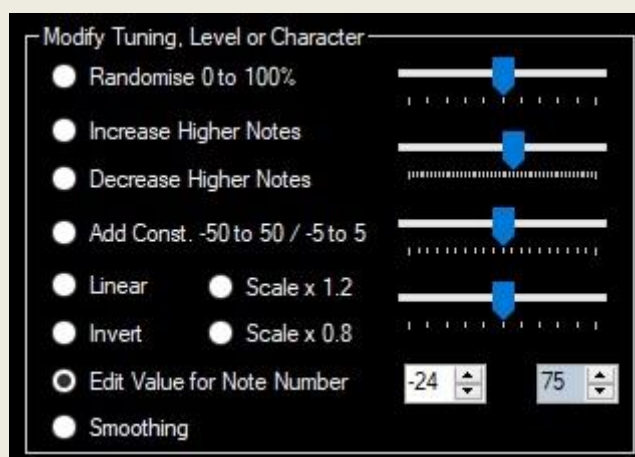
GLOBAL NOTE ARRAY PROCESSES

EDITING ONE NOTE AT A TIME

The 'Edit Value for Note Number' radio button at the bottom right allows you to specify the value for just one note. This works for Tuning, Character and Level. Note numbers 21 to 108. Tuning values +/-50 Cents, Character values -5 to 5. Level values 0 to -50. Useful for editing individual note values you want to modify.

Playing a key on the RD2000 will set the Note Number updown note button value automatically. If you play one note at a time it will help you find errant notes. Now adjust the 'Value'. If 'Send Sysex to RD2000' is checked the pressing 'Process' will update the RD2000 and the chart with your new value for that note. Repeat until you are satisfied. This is the approach used on the RD2000.

Note the RD piano keyboard starts from note A0 Midi note 21, followed by 88 notes, to note C8 midi note 108. C4 Midi note 60 is middle C.



Remember. If you hover over the chart, the tooltip for the note will automatically set the values in the two updown boxes. The same happens when you play a note on the RD2000. Here is a note value of -24 for midi note 75. This makes it quick to edit a single note.

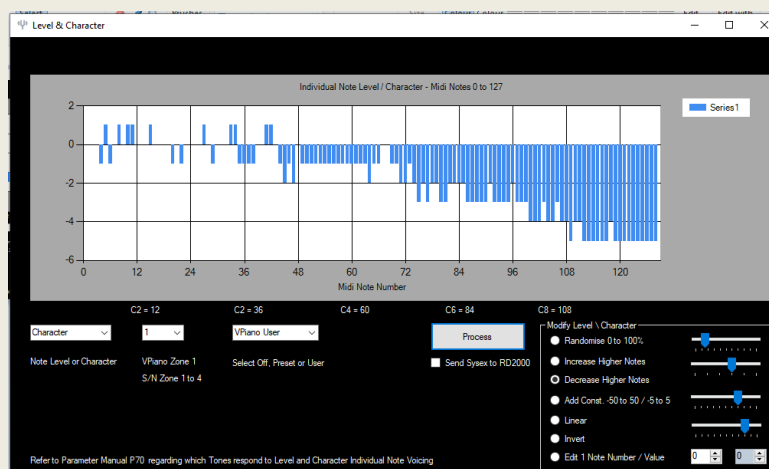
INCREASE HIGHER NOTES

Sometimes you may want to increase values for higher note numbers. To do this click the radio button on the lower right 'increase higher notes more' (exponentially). Try different slider positions for the slider and click 'Process'. See the example below. Moving the top 'slider' to the right magnifies this effect. Repeated clicks on Process stacks the effect across all 88 note numbers. See below with randomisation.



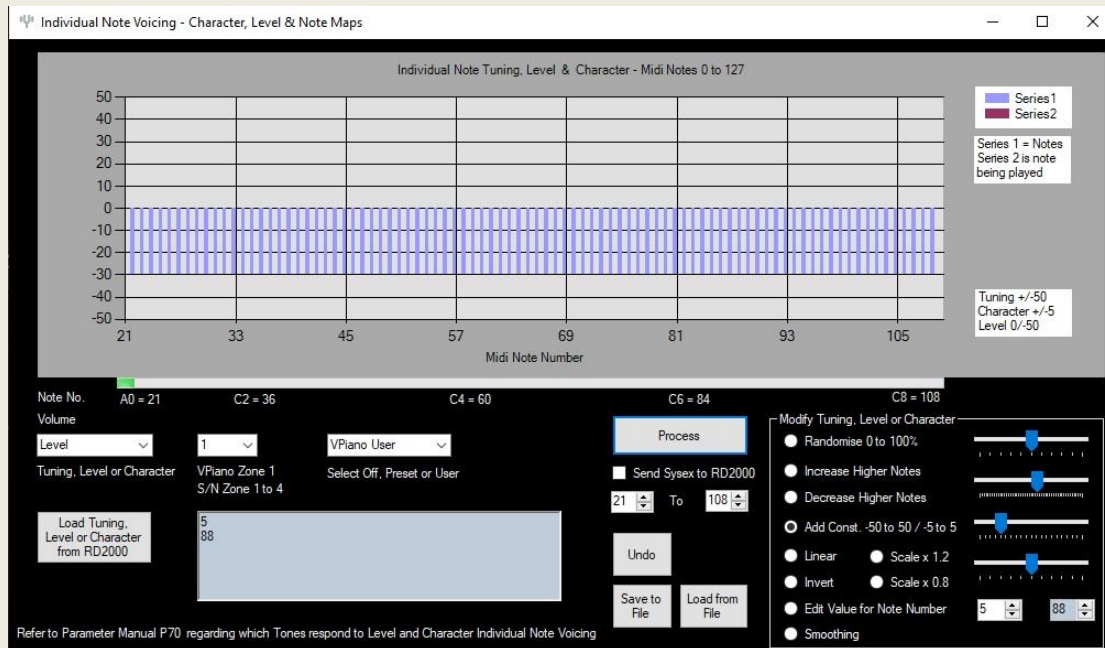
DECREASE HIGHER NOTES

Decrease the higher notes - using an exponential fn. To decrease the Tuning, Character or Level for Higher notes click on the 'Decrease Higher Notes More' radio button and try different slider positions. Moving the adjacent slider to the right magnifies this effect. See below with randomisation.



CONSTANT

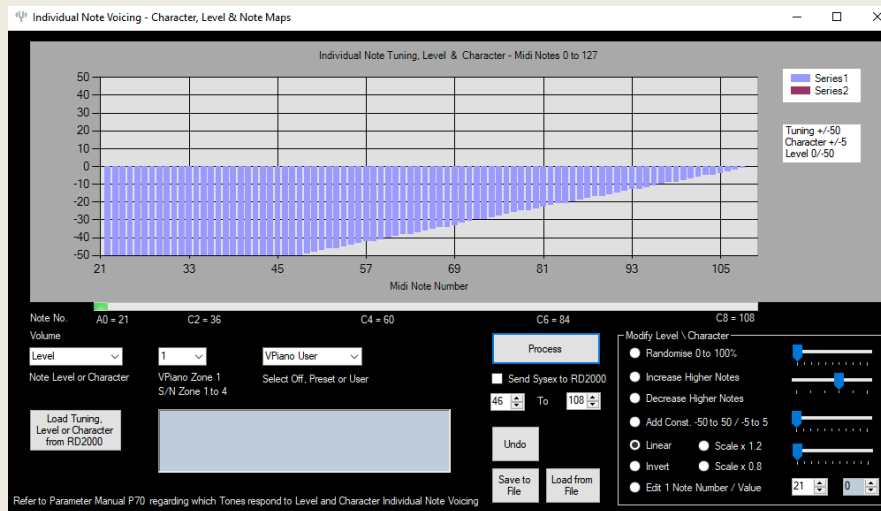
Adding a constant value. This slider adds a constant between -5 to +5 to the array for Character, 0 to -50 for Level and -50 to +50 cents for Tuning. Here a constant of -30 was added to an initial array of zero values for Level. See below.



LINEAR

This produces a linear relationship between value and note number for Tuning, Character or Linear and draws a straight line between the two note number bounds selected by the two updown buttons. Plus a constant of the slider to the right. Slider value. +-5.

See image below.



A linear operator applied between notes 46 and 108 to an array Initially of constant value -50 for Note Level.

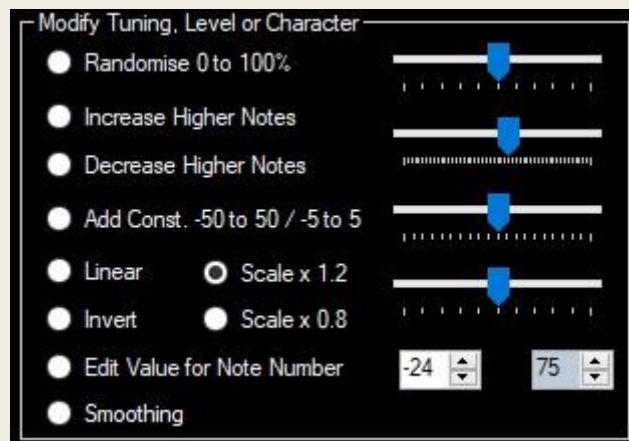
INVERT

The 'Invert' Radio button inverts the note array for Tuning, Character and Level. A Level of 0 goes to -50 and -50 goes to 0. For Tuning and Character the value just changes sign. See an inverted Character array below.



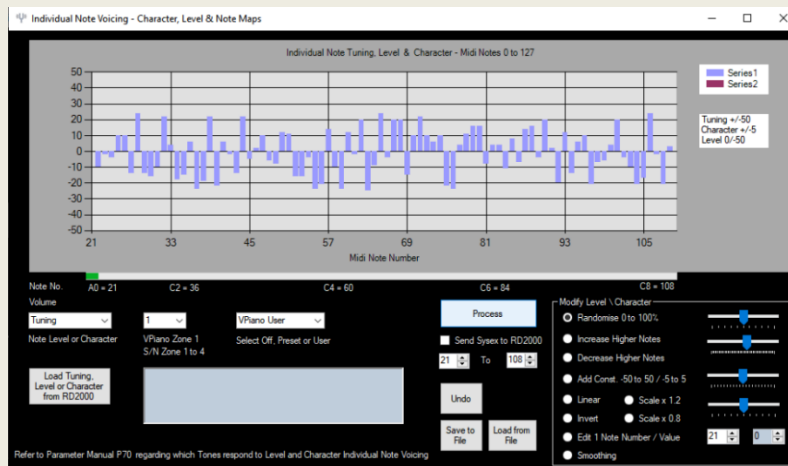
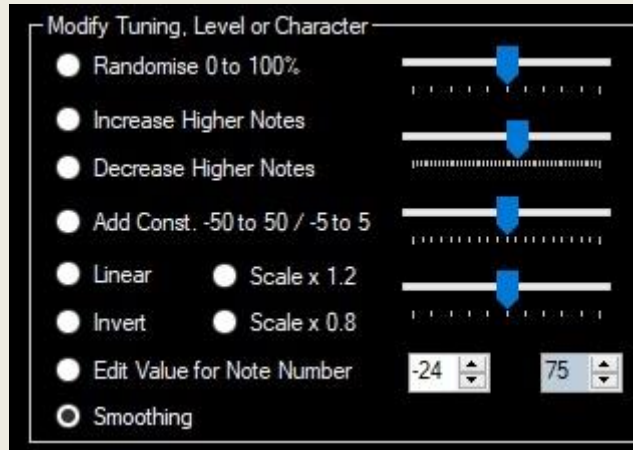
SCALE x 0.8 / 1.2

The 'Scale x 0.8' radio button multiplies each value in the array by 0.8. Sometimes you will want to reduce the overall scaling of the array after editing to make it more subtle. Clicking Process button multiple times (n) means each process multiplies the previous value by 0.8. ie. 0.8^n . The scale 1.2 button magnifies the note values. See below.

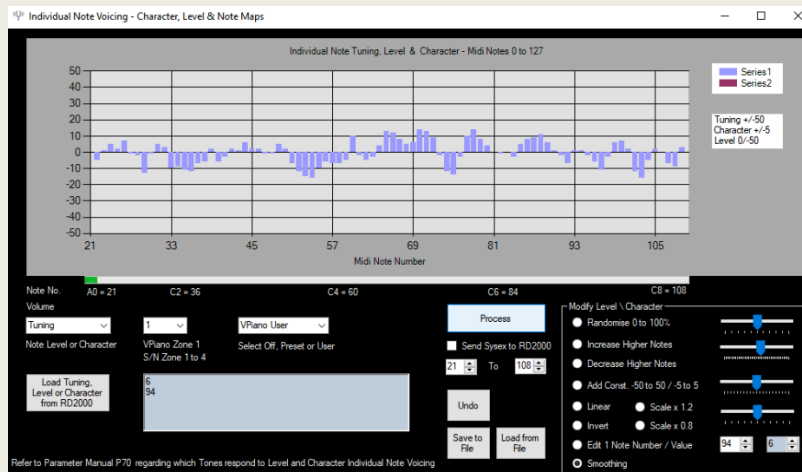


SMOOTHING

This Radio-button produces a rolling average of 3 successive note values. One pass is normally sufficient to smooth a profile.



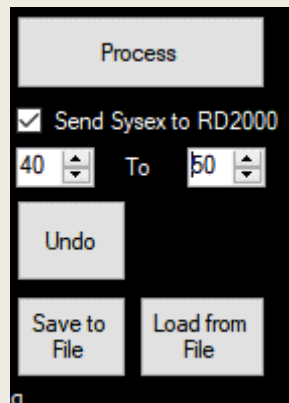
Before



After

EDITING A SELECTED NOTE RANGE

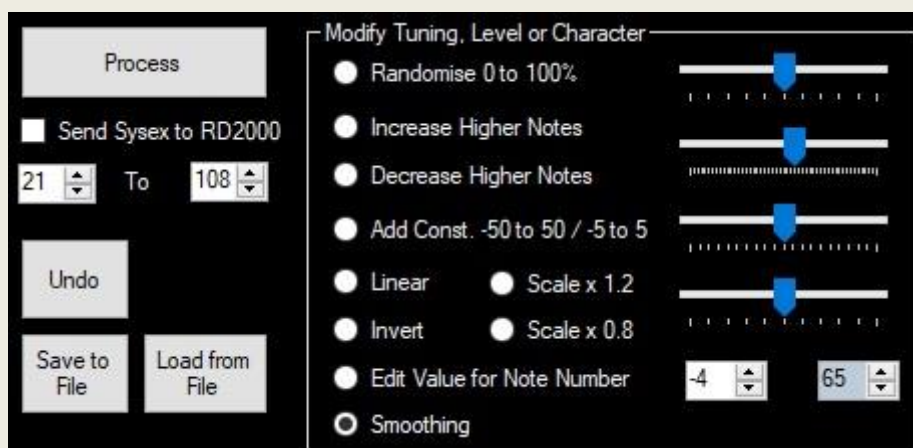
If you just want to edit the notes say between note 40 and 50 for Tuning, Level or Character then set the range on the two numeric updown buttons to the range you want - default 21 to 108. See below where they are set to lowest Midi note 40 and highest Midi note 50.



UNDO

This button reverts the note value array for Tuning, Character or Level to the previous processing step values.

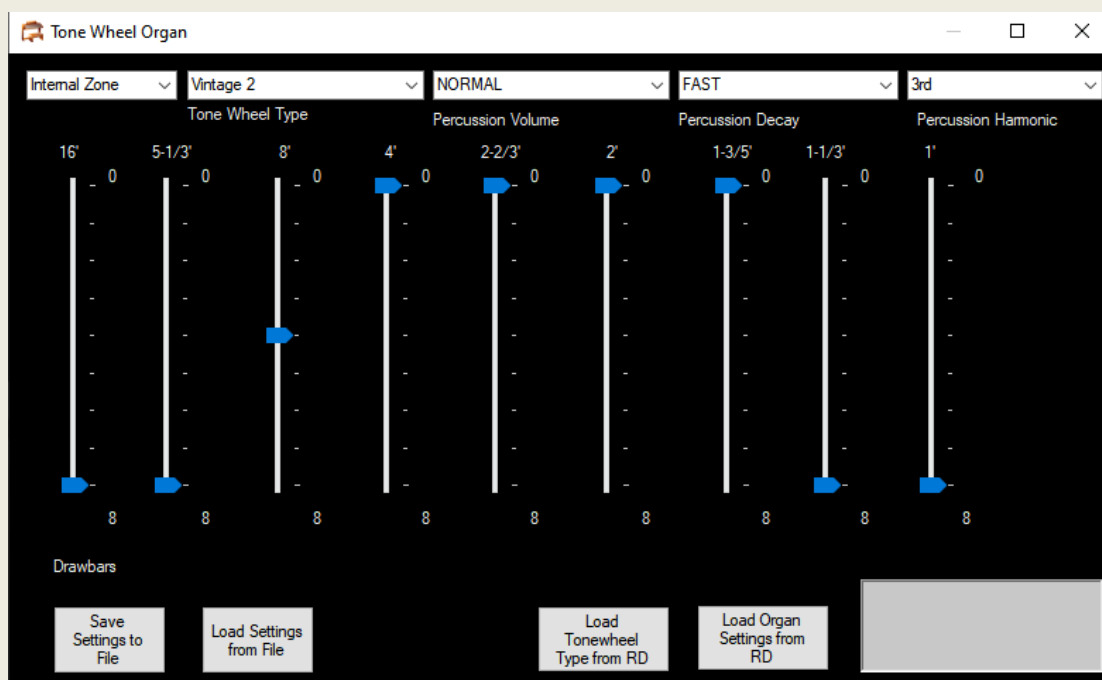
SAVE & LOAD NOTE VOICING MAPS TO FILE



To Save a voice map to file - click on the 'Save to File' button. Name it Char001 say or Tuning001 or Lev001 - it will be saved as a comma separated plain text file.

When you 'Load from File' a map, select the type Tuning, Character or Level from the drop-down box and load the appropriate Tuning, Character or Level file you created earlier.

TONEWHEEL ORGAN EDITOR



This is an emulation of the famous Hammond Tonewheel organ such as the B3, C3 and A100. The only part missing is a model of the organ's inbuilt vibrato feature. From firmware 1.5, the RD2000 improves the model with better Leslie speaker (rotary speaker type 2) emulation. See Tremolo effects for editing the Rotary 2 effect. By default the Rotary speed (Leslie speaker speed) is controlled by the D beam. Good to use this with a swell pedal with keyboard split so there are different settings for the left and right hand in say different zones. Say zone 1 right hand, zone 2 left hand as a keyboard split.

To load values from the RD, midi in and out in the software must be set to the RD2000 midi out/in. This is so the request to dump the sysex file can be received by the RD and the data dump is sent back to this software from the RD.

To retrieve settings for the Organ and Tonewheel type, choose the zone the organ is in - default is zone 1. There are two buttons which can request a midi dump and pick up the settings. The dump is displayed in the text box bottom RHS.

Note when you select an organ on the RD the faders become drawbars. If they are not enabled as such, then hold the Shift and Scene (harmonic bars) buttons together. The scene button will flash in this mode.

You can also Load and Save the current settings on the Form as a plain comma separated text file by Clicking on 'Save settings to File' Button. These are User Presets that can be shared with other users. These can be recalled using the 'Load Settings from File' Button. If you go to the Tone designer/Tone Wheel designer on the RD, you will see the values being updated when the Load button is clicked. Note that successive sysex messages are sent 30 milliseconds apart from the PC so that the RD Midi buffer does not fill up. Loading all settings takes about 0.5 seconds.

You might want to save presets (setting text files) based upon famous settings. Save it as a program on the RD and possibly a Scene.

For instance to get Jimmy Smith's favourite setting,

- Drawbars 8800 000 00
- Percussion Fast,
- Percussion normal,
- Percussion 3rd Harmonic
- Use Vintage 2 Tonewheel type
- Rotary 2 effect

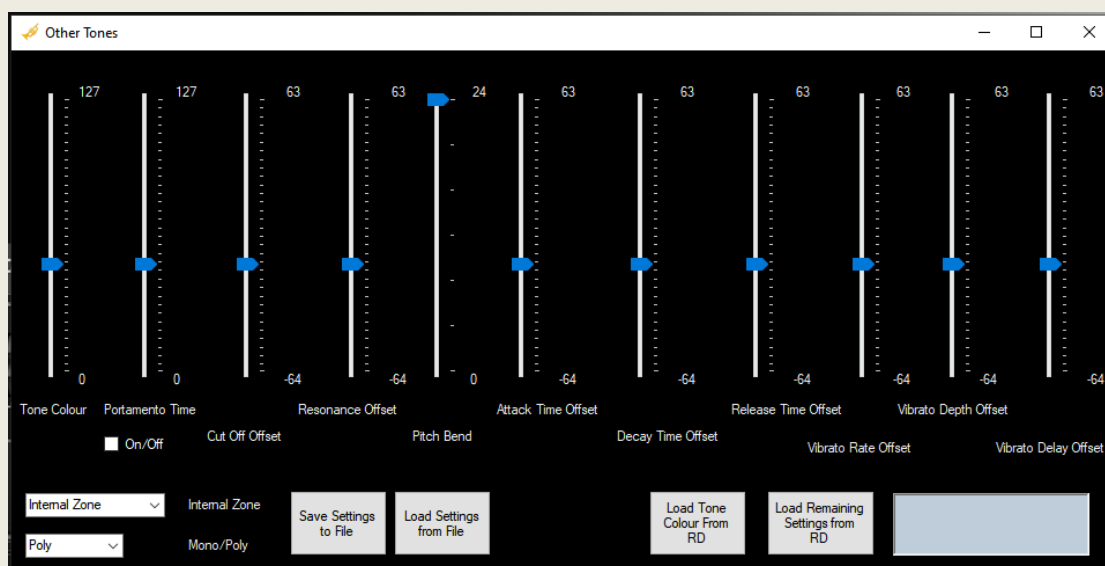
If you want to learn more about the Hammond organ there are two books I recommend.

- The Hammond Organ - Beauty in the B by Mark Vale and
- The Dictionary of Hammond Organ stops - Schirmer - unfortunately out of print but can sometimes be found in bookshops.

For exponents of the Hammond check out Jimmy Smith, Dr Lonnie Smith Cory Henry, Keith Emmerson, Jon Lord, Tony Banks, Rick Wakeman, Barbara Dennerlein etc.

See page 17 of the Parameter Manual.

OTHER TONES



Tones other than the V Piano, Supernatural pianos and Organs can be altered using this form. These tones are samples and can be edited in the RD2000 tone designer or in this software. Eg. Synths, acoustic instruments etc.

To load values from the RD, midi in and out in the software must be set to the RD midi out/in. This is so the request to dump the sysex file can be received by the RD and the data dump is sent back to this software from the RD.

If you have a tone other than VPiano, Supernatural Piano or Organ in the current program you can pick up the settings from the RD in the software using this form.

- Choose the zone the 'other tone' you want to load from the current program. By default zone 1
- Click 'Load Tone Colour ' to see these settings in the software
- Click 'Load remaining settings' to see the other values in this software.

If the dump is not successful or midi in and out are not set to the RD you will get an error message.

You can also Load and Save the current settings on the Form as a plain comma separated text file by Clicking on 'Save settings to File' Button. These are User Presets that can be shared with other users or stored for your use. These can be recalled using the 'Load Settings from File' Button. If you go to the Tone designer/Other Tones designer on the RD, you will see the values being updated when the Load button is clicked. Note that successive sysex messages are sent 30 milliseconds apart from the PC so that the RD Midi buffer does not fill up. Loading all settings takes about 0.5 seconds.

Note. For deep editing of synths I recommend using a hardware instrument or a VST.

See pages 12 to 13 of the Parameter Manual.

PART 2

THE SYNTHS

ROLAND SH1000 SYNTH



INSTALLATION Version 2.4

Note you need Native Instruments Reaktor 6.x Player or Full Version installed on your PC or Mac. The SH1000v24.ens (ensemble file) can be found in the RD2000 Editor installation directory. Copy it to say your documents folder. Open this with NI Reaktor 6 or [Reaktor 6 Player](#) free download by double clicking on it. It can be run as a standalone or as a plugin in a DAW. VST/AU. Windows and Mac.

The SH-1000 is an emulation of the Roland SH-1000 synthesizer first released in 1973 and which was Roland's 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 Vangelis, 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 as a Native Instruments Reaktor 6 or a NI Reactor Player 6 instrument (if Player is run in demo mode).

See my website. [Www.stuartpryer.co.uk](http://www.stuartpryer.co.uk) for more VSTs and music applications.

Reaktor 6 can be a VST, AU or AAX plugin.

PC /Mac Specs. Windows 10 or 11 / OSX 10.14 or higher - Mac or PC

Main features

1. SH1000 comes with over 50 snapshots (programs) in 1 bank. Please lower volume when trying these as some are much louder than others.

2. I also recommend 'Simply Fast Shots'. A Bank by Paule Amca in the NI User Library for the SH1000. This is embedded in the ensemble as bank

3. I have tried to keep the instrument as the original as possible except for the settings and oscillator sections. If you use initialise snapshot 002 values it emulates the original instrument fully. The synth has info hints for all controls. You can adjust the waveform frequencies to apply slight mistune which gives a fuller sound. You can also vary the individual volume of the waveforms.

There is a Portamento switch to turn the effect on/off and you vary the amount by turning the knob like the original. The synth has the organ style tabs below the keyboard modelled. The preset instruments tabs link to the snapshots in Reaktor - 42 to 51. You can of course change these should you wish.

The settings box and oscillator box contain enhanced features over the original. If you want just the original instrument use program 002 initialise. In settings it's possible to vary the vibrato delay (value in milliseconds) and vibrato waveform. You can also vary the Growl and Waw waveform as well as cross fade parameters.

4. Pitch - adjust in Reaktor or on Instrument for fine tuning, in cents. Like original it has option to raise or lower by 1 octave.

5. Tremolo - cyclic variation in volume - choose waveform, depth and frequency. Tabs switches on/off and waveform type sine/triangle.

6. Vibrato-cyclic variation in frequency. Choose delay in settings box (sine wave only) waveform, depth and frequency. Original had 2 waveforms. Tabs switches on/off, delay and waveform type. Noise - adjust cutoff frequency and resonance of noise generator - select HP, BP or LP filter using LEDs. Original had just white/pink option. = HP and LP.

7. Growl - phase modulation. Waw cut off frequency modulation. You can Select waveform, depth and frequency'

8. Portamento - when polyphony set to 1 notes glides in frequency. When polyphony set higher say 2. When third note played first note glides to it. Original SH-1000 was monophonic. Switch on panel switches on/off.

9. The ADSR envelope and cut off frequency controls are modelled as faders as per the original instrument. Envelope can also control volume and cut-off frequency Filter - cut-off and resonance - filter type selectable - High Pass, Band Pass and Low pass - use yellow LEDs to select. Original was just high pass. VCF sensitivity knob added like the original.

If the ADSR is used for the filter this over rides the cutoff slider. Note the instrument responds to touch sensitive keyboards (note velocity)

11. Polyphony 1 to 128 notes. Original monophonic. Adjust polyphony in Reaktor.

12. Oscillator section - Waveform mixer - adjusts each waveform volume and de tuning. Original on/off only.

13. Modulation wheel changes note frequency when moved up or down - use LED switch below it to activate. Original had simple glide button.

14. Playing - use PC keyboard which is polyphonic or even better your own external midi keyboard. Full 128 midi notes accessible. Three octave on-screen monophonic keyboard activated by mouse will produce sounds which are not as rich as using the computer keyboard

or an external midi keyboard. Original limited to 3 octaves with pitch raise/lower by 1 octave.

15. Like Original has hold note tab which holds note until next note played.

16. See Fractal Sequencer on my website for advanced sequencer/generative music features which can be used with SH-1000. To connect use midi yoke freeware or LoopBe1 on windows or IAC driver on a Mac. Original had simple Random Note generator.

17 There are 128 available program slots in Reaktor for a Bank. Original had no option to save or load settings. Program/bank load and save.

18.Midi enabled - Original no midi.

19. Version 2.4 - has updated sound presets which are closer to the original. Fixed bug when changing presets. Added tool tips (info) for all controls.

20. Can be used as a plugin in via Reaktor in a host - Logic, Bitwig, Sonar, Cubase, Cantabile, Ambleton etc. Host DAW controls the audio and Midi parameters.

21. Multiple instances of synth can be run if Reaktor is used as a plugin.

23.For plugin place Reaktor.xxx in your normal virtual instrument folder.

24.For more information email me at stuartpryer@gmail.com

25. My website with more synths is at www.stuartpryer.co.uk
Copyright Stuart Pryer - 25th November 2016 SH1000
This text updated 11th November 2023

BLUE SYNTH 3 - PHASE MODULATED SYNTHESIZER

A dedicated windows stand-alone/VST Phase Modulated synth. The blue3.exe file will be automatically installed in the RD2000 editor installation directory. Click on the 'Blue Synth' menu item in the 'Synths' menu to open it from within the software. The Windows VST 2.4 Blue Synth 3.dll plug-in is in the RD2000 installation directory as well so you can use in a DAW.



The top menu bar. Exe version only.

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 RD2000.

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 Oscilloscope 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 etc.) 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 11 - Laptop or PC - ideally >2gb ram and >2ghz processor. Also a mac running crossover for the .exe.

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.

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. Program/bank load and save.

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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MIDI RECORDER



A Windows app.

The MIDI Recorder 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 patten can be generated. The speed, mode and number of steps can be varied.

PART 3

TUTORIAL 1 - SETTING UP USB MIDI & AUDIO

The RD2000's sound pallet can be expanded limitlessly using a computer loaded with a virtual instrument host such as Bitwig, Apple Mainstage or Logic or PC DAWS such as Bitwig, BandLab Sonar and Cubase. The RD is a fantastic midi controller and has an inbuilt midi/audio interface. So how do you set up the RD and a DAW to work together so you can use the RD sounds and the sounds from a computer mixed together in the RD?

1. On the RD2000 menu/system set USB driver to 'Vendor' for audio and midi. Save the system settings by pressing the RD2000 **WRITE** button in the edit screen. Turn off RD 2000 and then turn it on again to initialise. You can use an Audio/ Midi interface OR the RD2000. The RD is midi class compliant for Midi so you can use the generic driver setting on the RD. *If you are using USB audio on the RD then - On the software go to system common/audio input switch to on. OR on RD2000 in the zone area (top right) select USB audio input button. Switch to on.*
2. Set an external zone on the RD 2000. Say set zone 5 to external. Use midi channel 1 say. Default for zone 5. The zone light will show green. Red is for internal zones. *In the software 'program common edit/zones Int/Ext' check zone 5 to make it external and 'Program Zone Edit/external zone' choose zone 5 and set midi port to USB. OR On the RD2000 select the zone you want to transmit on, then holding shift press it again until it's LRD is green.*
3. On the DAW set midi in chnl and midi out as nothing otherwise you may get a midi loop unless you turn off local control on the RD to 'uncouple' its keyboard for its sound engine. Set audio out to RD2000 or to your audio interface. Select an instrument on the DAW.
4. When you play a note on the RD, midi out note data is sent on Zone 5 channel 1 to the DAW which reads it. Produces a digital audio signal which is sent back by USB audio to the RD or audio interface where you can hear it mixed with the built-in sounds on internal zones.

5. Finally. You don't want to repeat this every time you turn the RD on. So use the EXIT button on the RD to return to the Program or Tone screen. It will show Edited on the display. Press the **WRITE** button on the RD. The program name screen appears. *In the software go to Program Common Edit/Program name and Name the program. Say "DAW".* Press 'Enter on the RD and choose an initialised (empty program slot to store the program. Press ENTER, then OK and Enter. All the settings are saved! Save DAW file too.

See pages 18, 19 & 23 of the RD2000 user manual for more information

Remember: -

Internal Zones 1 to 8 = midi in channels 1 to 8 by default.

External Zones 5 to 8 = midi in/out channels 1 to 4 by default.

You can change these if needed.

TUTORIAL 2A - SETTING UP A DAW

The RD2000 is a brilliant sound source and midi controller. This tutorial shows you how to set up the RD with a DAW (Digital audio workstation) so you can record your performance, add virtual instruments and edit your performance.

1. Make sure you load the RD2000 driver on your computer and enable 'Vendor' driver mode on the RD. This enables both MIDI and Audio input and output through USB. Or you can use a Midi USB interface.
2. On the RD in the system section there is a 'Record Mode'. Turn it on. This is a quick way to set the RD up for recording into a DAW.
3. Make sure the RD is set as the audio input and output. Create a new audio track. Make sure you can hear the RD playing through the DAW. I use a buffer of 256. Be careful not to drop the latency so low that you get pops and crackles or the cpu is overloaded.
4. In your DAW create a new midi track, make sure the RD is set as MIDI input. If you create a midi track you can edit your performance later and even change the instrument.
5. Bounce or export your track to a wav file etc. Note. In Logic if you play the wave file back it will probably play on iTunes or Quicktime player. These will normally output the sound to the inbuilt mac speakers not the RD. If you use speakers or headphones connected to the RD be prepared for that. You can change this in 'audio settings' on the Mac.

TUTORIAL 2B - THE RD2000 CONTROL SURFACE

You can use the RD2000 control surface - 8 knobs, 3 foot controllers FX1, FC2 and Ext pedal, switch 9, 2 mod wheels and 1 slider - to control external instruments or VST's. Set the zone - say 5 - to external. Press Shift and Zone switch to set LED to green. Note.

Ctrl (Control) mode (Ctrl Button) the Midi Control Change CC values sent from the RD for the current external midi channel (Zone 5 to 8, midi chnl 1 to 4), are fixed to: Knobs: 2 = Pan CC10, 3 = CC91 Reverb, 4 = CC93 Delay, 5 = Cutoff CC74, 6 = Resonance CC71, 7 = Attack CC73, 8 = Release CC72. 1 & 9 are not assigned. The sliders are all set to Midi Control Change CC07 midi channel master volume with the midi channel defined by the midi channel of the external zone selected. So only 1 slider per midi channel. This is a Program Common setting.



Assign Mode below Ctrl Mode

Assign mode When the Assign LED is lit you can send and set the midi CC values sent from the RD to the external instrument or VST for an RD Program. If you set program remain the assignment will stay when you switch programs on the RD. Hold shift button on the RD whilst moving an RD control to set the CC value. You can assign two wheels, 1 slider, 8 Knobs, button 9 and 3 Pedals each to CCO to 127 or Off. The midi channel transmitted depends which external zone is green and selected by the red zone button at the top of the Controls.

Note. You can only use one slider per midi channel. In Level Mode its set to CC7 master volume. But in Assign mode the slider can be set to CCO to CC 127 if the Assign button by the Master Volume slider is lit.



Assign Sliders to a CC

See the Parameter Manual Pages 7 and 8. If you use the Midi Mapper you can set the 9 sliders to send out CC or Sysex messages on the same channel.

Also see Foot Controllers and Wheels and Knob assignments pages in Program Common section. Default settings knobs 1 to 8 CC14 to 21. Ext Pedal CC11 expression = % of Master Volume. Slider with level button lit transmits CC7. Assign lit CC0 to 127. Mod Wheel CC1 modulation and Mod Wheel 2 unassigned by default, assign to a CC as required.

Midi Learn. For VST's it's often simpler to leave the CC values as they are and use Midi Learn on the VST/Daw if its available. Then save the project in your DAW to retain the midi learn values. The normal way of doing this for instance in Bitwig is to right click the particular control with the Assign LED lit on the RD for an external Zone. Select *Learn controller assignment*, then move the controller on the RD. This sets the link between the RD controller and the VST graphical controller. Most DAWs/VST's have midi learn.

Note. You can change Bank and Program on external synths using the jog wheel if you enter for the Ext Zone the Bank MSB/LSB of the external synth on the RD zone edit page! You can also rename the Ext Zone with the external sound module's name. See External Zone page in Program Zone Edit section for the settings.

TUTORIAL 3 - LAYERING AND SPLITTING THE KEYBOARD

The RD2000 is a very flexible instrument allowing up to 4 (maximum 8) programs to be layered or split. Normally I would only use up to 4 internal sounds to limit processor load.

Layering

Each Zone is a layer. Turning on the Zone using the Zone select button turns on the layer. Turning off the Zone turns off the layer. It's that simple. Layers can be internal or external zones. By holding down the tone button and then pressing a second and third it's easy to set up the layers in the order you press the buttons. Note V Piano can only be Zone 1.

Splits

Hold the 'Split' button and press a key to set the split point. Zone 1 will be to the right of the split point. Zone 4 will be to the left of the split point including the split point key. Press the split button again to turn off the split mode. This way you can split up to 8 zones - order being from left to right. For 2 zones it would be 4 on left/ 1 on right. The user can change the range and tones of the split regions. Splits can consist of a mix of internal and external zones.

TUTORIAL 4 - RD2000 RECOMMENDED ACCESSORIES

1. I use headphones most of the time. Do not scrimp here as you are using a very expensive and beautiful sounding instrument. I use Sennheiser HD 600s'. Classic neutral sounding headphones for listening and mixing. Remember the RD has a large dynamic range and requires Headphones which can handle this. Most CDs have compression applied and aren't so demanding. I cannot over emphasise how important good quality headphones are.
2. A good quality Headphone amp. I use Fiio but there are others. This provides a high impedance load for the RD output. And the ability to drive high impedance headphones like the HD600 at 300 ohms. The result is smoother and warmer sound.
3. Speakers for home use. I use Yamaha active monitors and a Yamaha active subwoofer. If you play to an audience either the house PA or good quality keyboard amps/speakers.
4. Use balanced connections when possible and high quality leads.
5. Mac or PC i5 or higher ideally with an SSD and >8gb ram for virtual instruments - for recording and virtual instruments.
6. If you use another hardware instrument an Audio Interface or a mixer. I use a Native Instruments KA6 mk2.
7. A very sturdy stand. Either the dedicated Roland stand or a four-leg table stand. I use the latter, as it folds, is compact and very strong.
8. Roland RPU 3 triple pedal unit or DP7.
9. A Roland EXP 5 expression pedal mainly for organ.
10. Surge protector - to protect your instrument
11. Dust cover - to protect your instrument
12. A good Daw. For Mac I recommend a host such as Bitwig, Logic or Mainstage. For Windows I recommend Bitwig or Cantabile (Cakewalk by Bandland is free).
13. Virtual Instruments. I recommend Native instruments - Reaktor (Monark, Cloud Lab, my SH1000 and thousands more instruments) FM8, Absynth, Vintage Organs, Massive and Massive X. Kontakt is a great sample based VST with some interesting alternative Pianos. Una Corda, Alicias Keys, The Giant. Also Korg collection 3 - Triton, Modwave, Wavestate and Opsix. I also use my own Virtual Instruments.
14. A second keyboard with a synth action sitting above the RD. Ideally a synth. I use a Korg Triton Pro 76 with a Moss physical modelling board.

TUTORIAL 5 - A TWO OR MORE 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 use it 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 Synth action keyboard or virtual instruments either separately or layered with its internal sounds 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 2000 plays its internal sounds.

I strongly recommend using Mac computers for recording. Their Midi and Audio functionality are much better than Windows PCs. You can also easily set up ad hoc networks to send midi to Windows PCs or iPads with The IAC network driver built into to the operating system. You can also set up aggregate audio devices.

I also strongly recommend a separate Midi interface. Note a midi output always goes to a midi input. For controller keyboards such as my Roland A800 Pro you generally only need Midi out as there are no onboard sounds.

For Audio I use a separate Audio interface - A Native Instruments KA6 mk 2. It is class compliant on a Mac and included midi in/out. This then drives my Yamaha active speakers and Yamaha Sub Woofer (important in my opinion especially for synths and Pianos). I also use a laptop for editing / librarian functions for the Triton and RD2000 using my own software (Triton Controller and Rd2000 Editor - this software).

TUTORIAL 6 - SHARING AND SAVING PROGRAMS

Once you create a program on the RD 2000 you may want to share it with other users or save it on your computer. This is how you do it.

1. First you need to back up the RD2000's data on a RD2000 formatted memory stick. Go to Menu, Utility, format. Once formatted go to Menu, Utility, Backup Save
2. Then you can load the data from the memory stick in its entirety, or all the programs only.
3. But you can also import just a single program from a backup and put it into a program location of your choice. To do this insert the backup usb drive with the program(s) you want to import into the RD USB memory port.
 - On the RD goto Menu, Utility, Import.
 - Scroll to the program on the backup you want to import you can see the name and bank/number. Shift + up/down buttons scrolls banks quickly. Eg C 10.
 - Then specify the destination you want the program Bank/no. eg E 05.
 - Click OK.

TUTORIAL 7 - SETTING UP BITWIG STUDIO

Bitwig studio is the most intuitive DAW I have used. I have used many DAWs in the past! You can also build your own instruments and effects. So how do you set up the RD and Bitwig to work together so you can use the RD sounds and the sounds from a computer and maybe another hardware synth mixed together?

MIDI. In Bitwig I use *Generic Keys 2* as the Controller Script. This java script can be downloaded from the internet - This enables the routing of midi channels properly. Set midi in/out of the RD as say external zone 5 midi chnl 1 default to Bitwig midi in and midi out of Bitwig to the RD. If you are using VSTs then set their MIDI in from an RD external zone, Midi out ext zone 5 say, or maybe another hardware synth on say midi channel 5. NB. You need a Bitwig controller script for each hardware synth. Another good script is *DrivenbyMoss* with the *Generic Flexi* controller where you can map controllers on unsupported equipment - ie. where Bitwig does not have a dedicated controller script.

AUDIO. Set audio into Bitwig as RD 2000 or the audio out of your audio interface. Set audio out of Bitwig to RD2000 or your audio interface. Select a VST instrument on the DAW set audio out to the RD or your audio interface.

NB. Bitwig has the *Grid*, *Note* and *Polygrid* for creating your own effects and instruments! It supports VST 2/3 and 32/64 bit plug-ins and runs on Macs and PCs.

Setting up in Bitwig.

1. Define your Audio interface input and output - in Bitwig Settings - Audio
2. Each keyboard needs to be set up as a separate Midi controller. In Bitwig I use 'generic keys 2' as Korg and Roland are not well represented in Bitwig unfortunately. Give each controller a suitable name. The controller's inputs and outputs can be defined easily by name and Midi channels 1 to 16. - See Bitwig Settings.
3. I normally leave my Korg Triton on channel 5 for its midi transmit channel. Local control off to stop repeated notes and midi loops.
4. On the RD it is easy to toggle on/off Midi channels using the zone buttons on the control surface. Note Zones 1 to 4 map to Midi out

Channels 1 to 4 by default. Ext Zones 5 to 8 by default also map to Midi out channels 1 to 4. You can put the RD into Recording mode - Local Control on. This way when the buttons are red Midi is still transmitted.

5. In Bitwig add + a Hardware Controller (add device - HW controller) name the Controller you use eg. RD2000. Specify Midi-in to Bitwig in the left-hand box which appears when you click on the track. Do this by the controller(s) name and midi channel(s).
6. Midi out is specified in the device viewer at the bottom left of the arranger screen. Specify Controller(s) and Midi Channel(s)
7. Add the next hardware controller - repeat above. Etc.
8. Finally add another instrument track(s) for software synths. Specify Midi In routing as above and audio out routing. Repeat for as many VST's as you need.
9. Set up audio track(s) to record the VST and /or the RD and /or other hardware synth(s). Define the audio tracks Audio in.
10. Remember you will only hear the tracks which you select, by clicking on them. Multiple selections are possible using ctrl windows/Cmd Mac.
11. When it's all working save the project as a Bitwig Template. That way you won't need to set this up again.
12. The first track I lay down is usually percussion. I use the Bitwig Drum Machine which has a very large collection of drum samples and has randomisation. To do this, on a track add the Drum machine instrument. Load a drum kit using the folder icon under the power button. Then draw using the pencil on the note editor or play your hardware midi keyboard to create the drum midi sequence for each drum type. Set loop points and loop. Press 'play'.

Controller Mapping

I find I mainly tend to use 1 VST instrument per project as I have hardware instruments. I typically use 4 hardware knobs, so I manually map any hardware controllers I need.

1. Turn a knob or move a slider on the VST and in the vst device pane at the bottom the virtual controller 'knob' will move.
2. Right click and choose 'manually map the controller or key'.
3. Turn a knob on your hardware controller and it's is mapped! Goto 1. Repeat for each hardware controller knob/slider/key you need.
4. Save the project saves the mappings.

TUTORIAL 8 – RECORDING SYSTEM AUDIO IN A DAW

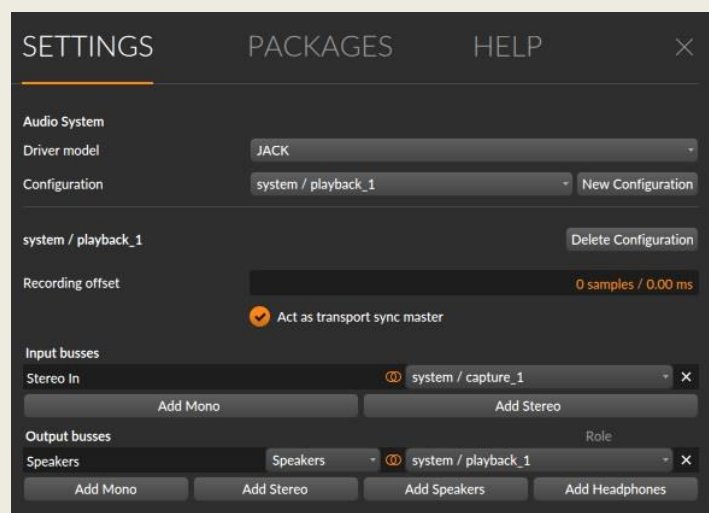
Sometimes you may want to sample sounds from the internet to use in your project. This is how you can do it. This requires internal audio routing. This does not come native with either Windows or Mac.

Windows

The Jack 2 audio driver works with any DAW. In Bitwig for instance; like Audacity (Waspi loop back), you can record system audio. Install the Jack 2 driver. Go to Settings/Audio in the DAW and set the Driver Model = Jack
Config = system/playback
Stereo in to DAW = Jack - system/capture
Stereo out from DAW = Jack - system/playback and speakers.

You can now record an audio sample track in your DAW. And then maybe use the audio clips in your project, subject to copyright. See setup below. This is in Bitwig as an example.

[Download | JACK Audio Connection Kit](#)



Mac

Note. Jack 2 currently only works on Windows. There seem to be Mac issues with the MacOS installer to do with OS security at the moment. Soundflower no longer works, so I recommend you use the free driver Black Hole. Install the driver.

DAW audio Input = Black Hole.

If you can't hear the audio but can record it, create a Multiple output device of Black Hole and Speakers in Mac/Utilities Audio/midi setup. Then select the Multiple output device in Mac settings/sound. Set that output in your DAW.

[Download BlackHole:](#)

TUTORIAL 9 - CREATING A PROGRAM

You can either edit an existing program to make it sound like you want or you can create a program from scratch using an Initialised Program. Here is how to do the latter.

1. Decide what sound you want? Let's say a Piano layered with strings.
2. Select an Initialised Program
3. Turn on internal Zone 1 - Red LED - and select a Piano. Say a VPiano. So Select a V-Piano Tone you like. Scroll through the different Tones using the piano tone button and the silver scroll wheel.
4. Adjust the V-Piano Tone Editor and note voicing settings to your liking.
5. Add any reverb send and select the reverb type
6. Add any Delay send and select the Delay type
7. For tones other than VPiano you can add Amp Sim or Effects.
8. Set any controller settings such as damper on/off, mod wheels etc.
9. Now do the same for the String Tone in zone 2 -> go through points 2 to 8
10. Set any external zones up as needed - say for VST or hardware instruments. Start at zone 5 - green LED.
11. Set any Compressor or Equaliser settings for the whole Program.
12. **Write** and Name the program to an initialised Program/Bank on the RD2000.

TUTORIAL 10 - ELECTRONIC MUSIC

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. One of the founders was Roland's Ikutaro Kakehashi the other was Tom Oberheim. It was first successfully demonstrated in 1983 with a Dave Smith Sequential Circuits Prophet 600 connected to a Roland Jupiter 6. The standard is largely unchanged and has enabled computers to fully integrate with synthesizers. Before then there were different standards of control voltages CVs' which meant people were tied to a manufacturer's standard. MIDI enables one instrument to control another or a computer to control, or be controlled, by an electronic instrument. It's now the basis of synth and sequencer communications

The first sequencer program I wrote was for the Korg MS20 in 1982. 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 now 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. 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 1.0 Instrument list. Note. If the Bank on the RD2000 is set to Bank 01 (using the Midi / Settings form), then you will get the General Midi instruments in the RD. Programs 1 to 128 below.

| | | |
|--|--|--|
| <p>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</p> <p>Chromatic Percussion: 9 Celesta 10 Glockenspiel 11 Music Box 12 Vibraphone 13 Marimba 14 Xylophone 15 Tubular Bells 16 Dulcimer</p> <p>Organ: 17 Drawbar Organ 18 Percussive Organ 19 Rock Organ 20 Church Organ 21 Reed Organ 22 Accordion 23 Harmonica 24 Tango Accordion</p> <p>Guitar: 25 Acoustic Guitar (nylon) 26 Acoustic Guitar (steel) 27 Electric Guitar (jazz)</p> | <p>Strings: 41 Violin 42 Viola 43 Cello 44 Contrabass 45 Tremolo Strings 46 Pizzicato Strings 47 Orchestral Harp 48 Timpani</p> <p>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</p> <p>Brass: 57 Trumpet 58 Trombone 59 Tuba 60 Muted Trumpet 61 French Horn 62 Brass Section 63 Synth Brass 1 64 Synth Brass 2</p> <p>Reed: 65 Soprano Sax 66 Alto Sax 67 Tenor Sax 68 Baritone Sax</p> | <p>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)</p> <p>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)</p> <p>Ethnic: 105 Sitar 106 Banjo 107 Shamisen 108 Koto 109 Kalimba 110 Bag pipe 111 Fiddle 112 Shanai</p> <p>Percussive: 113 Tinkle Bell 114 Agogo 115 Steel Drums 116 Woodblock 117 Taiko Drum</p> |
|--|--|--|

| | | |
|--|---|---|
| <p>28 Electric Guitar (clean)</p> <p>29 Electric Guitar (muted)</p> <p>30 Overdriven Guitar</p> <p>31 Distortion Guitar</p> <p>32 Guitar harmonics</p> <p>Bass:</p> <p>33 Acoustic Bass</p> <p>34 Electric Bass (finger)</p> <p>35 Electric Bass (pick)</p> <p>36 Fretless Bass</p> <p>37 Slap Bass 1</p> <p>38 Slap Bass 2</p> <p>39 Synth Bass 1</p> <p>40 Synth Bass 2</p> | <p>69 Oboe</p> <p>70 English Horn</p> <p>71 Bassoon</p> <p>72 Clarinet</p> <p>Pipe:</p> <p>73 Piccolo</p> <p>74 Flute</p> <p>75 Recorder</p> <p>76 Pan Flute</p> <p>77 Blown Bottle</p> <p>78 Shakuhachi</p> <p>79 Whistle</p> <p>80 Ocarina</p> <p>Synth Lead:</p> <p>81 Lead 1 (square)</p> <p>82 Lead 2 (sawtooth)</p> <p>83 Lead 3 (calliope)</p> <p>84 Lead 4 (chiff)</p> <p>85 Lead 5 (charang)</p> <p>86 Lead 6 (voice)</p> <p>87 Lead 7 (fifths)</p> <p>88 Lead 8 (bass + lead)</p> | <p>118 Melodic Tom</p> <p>119 Synth Drum</p> <p>Sound effects:</p> <p>120 Reverse Cymbal</p> <p>121 Guitar Fret Noise</p> <p>122 Breath Noise</p> <p>123 Seashore</p> <p>124 Bird Tweet</p> <p>125 Telephone Ring</p> <p>126 Helicopter</p> <p>127 Applause</p> <p>128 Gunshot</p> |
|--|---|---|

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.

TABLE OF MIDI CC MESSAGES

| CC Number | Purpose | Description |
|-----------|---------------------------------------|---|
| CC 0 | Bank Select | Allows user to switch bank for patch selection. Program change used with Bank Select. MIDI can access 16,384 patches per MIDI channel. |
| CC 1 | Modulation | Generally, this CC controls a vibrato effect (pitch, loudness, brightness). What is modulated is based on the patch. |
| CC 2 | Breath Controller | Often times associated with aftertouch messages. It was originally intended for use with a breath MIDI controller in which blowing harder produced higher MIDI control values. It can be used for modulation as well. |
| CC 3 | Undefined | |
| CC 4 | Foot Controller | Often used with aftertouch messages. It can send a continuous stream of values based on how the pedal is used. |
| CC 5 | Portamento Time | Controls portamento rate to slide between 2 notes played subsequently. |
| CC 6 | Data Entry Most Significant Bit (MSB) | Controls Value for NRPN or RPN parameters. |
| CC 7 | Volume | Control the volume of the channel |
| CC 8 | Balance | Controls the left and right balance, generally for stereo patches. 0 = hard left, 64 = centre, 127 = hard right |
| CC 9 | Undefined | |
| CC 10 | Pan | Controls the left and right balance, generally for mono patches. 0 = hard left, 64 = centre, 127 = hard right |
| CC 11 | Expression | Expression is a percentage of volume (CC7). |
| CC 12 | Effect Controller 1 | Usually used to control a parameter of an effect within the synth/workstation. |
| CC 13 | Effect Controller 2 | Usually used to control a parameter of an effect within the synth/workstation. |
| CC 14 | Undefined | |

| | | |
|------------|---|---|
| CC 15 | Undefined | |
| CC 16 - 19 | General Purpose | |
| CC 20 - 31 | Undefined | |
| CC 32 - 63 | Controller 0-31 Least Significant Bit (LSB) | |
| CC 64 | Damper Pedal / Sustain Pedal | On/Off switch that controls sustain. (See also Sostenuto CC 66) 0 to 63 = Off, 64 to 127 = On |
| CC 65 | Portamento On/Off Switch | On/Off switch 0 to 63 = Off, 64 to 127 = On |
| CC 66 | Sostenuto On/Off Switch | On/Off switch - Like the Sustain controller (CC 64), However it only holds notes that were "On" when the pedal was pressed. People use it to "hold" chords" and play melodies over the held chord. 0 to 63 = Off, 64 to 127 = On |
| CC 67 | Soft Pedal On/Off Switch | On/Off switch - Lowers the volume of notes played. 0 to 63 = Off, 64 to 127 = On |
| CC 68 | Legato Footswitch | On/Off switch - Turns Legato effect between 2 subsequent notes On or Off. 0 to 63 = Off, 64 to 127 = On |
| CC 69 | Hold 2 | Another way to "hold notes" (see MIDI CC 64 and MIDI CC 66). However notes fade out according to their release parameter rather than when the pedal is released. |
| CC 70 | Sound Controller 1 | Usually controls the way a sound is produced. Default = Sound Variation. |
| CC 71 | Sound Controller 2 | Allows shaping the Voltage Controlled Filter (VCF). Default = Resonance - also(Timbre or Harmonics) |
| CC 72 | Sound Controller 3 | Controls release time of the Voltage controlled Amplifier (VCA). Default = Release Time. |
| CC 73 | Sound Controller 4 | Controls the "Attack" of a sound. The attack is the amount of time it takes for the sound to reach maximum amplitude. |
| CC 74 | Sound Controller 5 | Controls VCFs cutoff frequency of the filter. |

| | | |
|------------|------------------------------------|---|
| CC 75 | Sound Controller 6 | Generic - Some manufacturers may use to further shave their sounds. |
| CC 76 | Sound Controller 7 | Generic - Some manufacturers may use to further shave their sounds. |
| CC 77 | Sound Controller 8 | Generic - Some manufacturers may use to further shave their sounds. |
| CC 78 | Sound Controller 9 | Generic - Some manufacturers may use to further shave their sounds. |
| CC 79 | Sound Controller 10 | Generic - Some manufacturers may use to further shave their sounds. |
| CC 80 | General Purpose MIDI CC Controller | Generic- On/Off switch 0 to 63 = Off, 64 to 127 = On |
| CC 81 | General Purpose MIDI CC Controller | Generic - On/Off switch 0 to 63 = Off, 64 to 127 = On |
| CC 82 | General Purpose MIDI CC Controller | Generic - On/Off switch 0 to 63 = Off, 64 to 127 = On |
| CC 83 | General Purpose MIDI CC Controller | Generic - On/Off switch 0 to 63 = Off, 64 to 127 = On |
| CC 84 | Portamento CC Control | Controls the amount of Portamento. |
| CC 85 - 90 | Undefined | |
| CC 91 | Effect 1 Depth | Usually controls reverb send amount |
| CC 92 | Effect 2 Depth | Usually controls tremolo amount |
| CC 93 | Effect 3 Depth | Usually controls chorus amount |
| CC 94 | Effect 4 Depth | Usually controls detune amount |
| CC 95 | Effect 5 Depth | Usually controls phaser amount |
| CC 96 | (+1) Data Increment | Usually used to increment data for RPN and NRPN messages. |
| CC 97 | (-1) Data Decrement | Usually used to decrement data for RPN and NRPN messages. |

| | | |
|--|---|---|
| CC 98 | Non-Registered Parameter Number LSB (NRPN) | For controllers 6, 38, 96, and 97, it selects the NRPN parameter. |
| CC 99 | Non-Registered Parameter Number MSB (NRPN) | For controllers 6, 38, 96, and 97, it selects the NRPN parameter. |
| CC 100 | Registered Parameter Number LSB (RPN) | For controllers 6, 38, 96, and 97, it selects the RPN parameter. |
| CC 101 | Registered Parameter Number MSB (RPN) | For controllers 6, 38, 96, and 97, it selects the RPN parameter. |
| CC 102 - 119 | Undefined | |
| <i>MIDI CC 120 to 127 are "Channel Mode Messages."</i> | | |
| CC 120 | All Sound Off | Mutes all sounding notes. It does so regardless of release time or sustain. (See MIDI CC 123) |
| CC 121 | Reset All Controllers | It will reset all controllers to their default. |
| CC 122 | Local On/Off Switch | Turns internal connection of a MIDI keyboard/workstation, etc. On or Off. If you use a computer, you will most likely want local control off to avoid notes being played twice. Once locally and twice when the note is sent back from the computer to your keyboard. |
| CC 123 | All Notes Off | Mutes all sounding notes. Release time will still be maintained, and notes held by sustain will not turn off until sustain pedal is depressed. |
| CC 124 | Omni Mode Off | Sets to "Omni Off" mode. |
| CC 125 | Omni Mode On | Sets to "Omni On" mode. |
| CC 126 | Mono Mode | Sets device mode to Monophonic. |
| CC 127 | Poly Mode | Sets device mode to Polyphonic. |

USER TIPS

1. Download expansion packs 5 - tonewheel organs and 6 synths. Packs 1 to 4 add pianos from previous RD models. I think the organs and synths are more useful. I also recommend the Vpiano German expansion from Roland Cloud for more Vpiano tones. It really is a fantastic addition.
2. The one area of weakness with the RD is Synth sounds. It is a stage piano primarily. To expand the possibilities with synths I recommend you use external software or hardware synths, which will enable deep editing of sounds. I have also designed several software synths - see synth section next page and my website.
3. 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. Korg collection 3 is also excellent. Particularly Triton, Modwave, Wavestate and Opsix.
4. 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 the Korg Triton Pro with a MOSS physical modelling board or the Roland A800 Pro 61 to control the virtual instruments and keep the RD controlling its own sounds. The second keyboard can also be used as the upper manual for Organ tones.
5. For live playing of Virtual instruments I have found Bitwig to be the most stable DAW I've used and its cross platform. I particularly like the way it sand boxes the VST's. So if a VST crashes the DAW doesn't. Alternatives are Mainstage (Mac) or Cantabile (Windows)
6. For recording I recommend Bitwig Studio. Version 5 or higher. You can also design your own instruments and effects in it.

Stuart

FINALLY

My website details are <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 - VERSION NUMBERS

For detailed change log/'blog' see Roland Clan Forums - RD2000

1.0.0 - 9th December 2018 - First release

First standalone version - Based upon Fractal Sequencer MIDI module.

1.05 added ability to send sysex

1.06 bug fixes

1.07 Added Program Edit form

1.7.4 Completed Tremolo effects and started Mod fx

1.8.4 Added 10 effects - Jan 2019

2.0.x February 2019 completed Midi implementation.

2.3.0 May 2019 - Programme complied using the latest version of Visual Studio - 2019. All documentation now included in the installer and deployed when installed.

2.3.1 Changed main form picture - courtesy of Gus and RD2000fan.

2.3.2 June 2019 - Corrected text in equaliser High Frequency groupbox which was labelled incorrectly as Low Frequency. Re-complied with Visual Studio 2019 update.

3.0.0 April 2023 Added the Roland Cloud German Vpiano expansion tones for firmware version 2. Complied with MS Visual Studio 2022.

3.1.0 Added ability to load Vpiano settings directly from RD using Midi. Also the ability to save the settings as a text file on

the PC and reload them from the text file and push to the RD2000.

- 3.2.2 Added ability to retrieve Supernatural Piano, Clav and ePiano settings from the RD2000 using Midi.
- 3.2.3 Added ability to retrieve Organ and Other Tones settings from the RD2000 using Midi.
- 3.2.4 Corrected bug with tone bar slider range
- 3.2.5 Added ability to retrieve Supernatural Piano, Clav and ePiano Sympathetic Resonance parameters from the RD2000 using Midi. Added tool tips to sliders to show values for supernatural piano tone editor.
- 3.2.6 Added tool tips to sliders to show values for VPiano, Organ and Other tones editors as well.
- 3.2.7 Minor bug fixes with tooltips/ labels on Vpiano form and SN pianos.
- 3.2.8 A couple of Minor bug fixes with tooltips/ labels on Vpiano form and SN pianos. Updated this documentation.
- 3.2.9 23rd April 2023. Added copy to clipboard button on VPiano form. The main form no longer obscures the windows task bar at certain resolutions. Updated this documentation.
- 3.3.0 Added facility to quickly compare before and after settings on the VPiano.
- 3.3.1 Added individual note voicing for Level and Character by note.
- 3.3.2 Added ability to modify character for high or low notes.
- 3.3.3 Added linear mapping for character v note number. Added ability to switch between Level or Character and VPiano User or S/N User and switch off both from the software.
- 3.3.4 Added Invert command to character map and the ability to tooltips which show chart Y values and midi note numbers.

- 3.3.5 30 April 2023. Added ability to stack processing commands for both Level and Character maps. Added ability to edit a single note voicing for Level and Character. Added global scale x 0.8 option.
- 3.3.6 2nd May 2023 Added ability to save to file an Individual Note voicing Character or Level map. Then reload the map from file.
- 3.3.7 Minor bug fixes. Added Firmware Version 2.0 manual which covers the new German Piano expansion tones. The latter can be purchased through Roland Cloud. Added tooltips for Individual Note Voicing sliders.
- 3.3.8 Added ability to load and view Individual Note Tuning Profiles.
- 3.3.9 Added ability to edit, Save and Load Tuning Maps to PC and load them into the RD2000. Added Undo processing. Added ability to edit between user defined note range.
- 3.4.0 Added bar to show note played on RD2000 keyboard on the Note voicing graph via a progress bar. Also shows the incoming note number as text and a red moving marker on the chart.
- 3.4.1 Improved graphics for note voicing chart. Made incoming note bar bigger 5 units tall, fixed y axis scale to +-50 and changed background to grey to match RD2000 display.
- 3.4.2 Downloading Individual Note Voice Tuning Maps now takes 2 seconds. Corrected bug in Individual Note Voicing for 'Scale' 0.8 and 1.2 function for both character and level. Stack processing for both character and level is now working properly.
- 3.4.3 Enlarged chart for Note Voicing so it's easier to see. It now shows just the 88 notes of the RD2000 keyboard. A0 to C8.
- 3.4.4 Corrected bug with show note in Note voicing form.
- 3.4.5 Added ability to download Reverb settings from RD2000 to this software.

- 3.4.6 Added ability to download EQ settings from RD2000 to this software.
- 3.4.7 You can download current Internal or External Zone status. Same as the Red/Green Zone switches.
- 3.4.8 You can now download settings from the Rd2000 for 'Program Zone Edit' / 'Internal Zones'. Changed code so Windows 7 does not throw a warning.
- 3.4.9 You can now download settings from the RD2000 for System Common settings. Various bug fixes to software.
- 3.5.0 Added ability to download all delay settings.
- 3.5.1 Added ability to Load Compressor settings and Foot controller /wheel controller settings from the RD. Various bug fixes in Delay section.
- 3.5.2 Added ability to Load Knob Assignments and Program External Zone settings
- 3.5.3 Added ability to Load Tremolo and Amp Sim Types 1 to 7.
- 3.5.4 Bug fixes to Tremolo/Amp Sim Types 1 to 7.
- 3.5.5 Bug fixes - program external.
- 3.5.6 Fixed bugs in Program External Form. Release version.
- 3.5.9 Fixed bug in Load Individual Note Tuning in 3.5.7/3.5.8
- 3.6.0 Modified layout colours in Note Tuning so the form works and appears properly Codeweavers Crossover for Mac 22.x.
- 3.6.1 Added ability to download from RD2000 Individual Note Level and Character maps.
- 3.6.2 Added ability to change Key Touch settings and Load them from the RD2000.
- 3.6.3 Added the ability to request the Current Program and Current Tone.

- 3.6.4 Added ability to load from the RD2000 the Current Rhythm settings
- 3.6.5 Added ability to import your own program list into the default program list database.
- 3.6.6 Added ability to download program names using Midi and save them on your PC.
- 3.6.7 Added ability to add Program memos and save favourites and set lists.
- 3.6.8 You can now search scene memos or for any text in the large text box.
- 3.6.9 You can now save Super Natural Piano / Sympathetic Resonance Settings, Organ (Tone wheel designer) settings and Other Tone Designer settings to a text file and reload them.
- 3.7.0 Squashed a bug in S/N piano settings, load from file. Improved Linear operator for individual note voicing. Improved Bank/program change on midi settings form.
- 3.7.1 The application is now in the Codeweavers C4 database for running under Codeweavers Crossover 22.x or higher on a Mac running OSX Mojave or higher. Improved note voicing exponential and constant function resolution.
- 3.7.2 3rd June 2023 - Playing a note on the RD2000 will now update the note number automatically in Individual Note Voicing - Edit One Note Number operator. Also hovering and getting a tooltip on a chart value will return note number and also the value to the 'Edit one Note at a Time' updown buttons.
- 3.7.3 Added smoothing function to individual note voicing.
- 3.7.4 Improved Load All Programs from RD2000 routine and % complete reported on buttons text.
- 3.8.0 In Program Library searching is now case insensitive for both data grid and textbox. Tidied up Midi Settings form.

- 3.8.1 Modified 'download all programs' routine - each program loads at 2 sec intervals to reduce load on RD2000 with successive sysex messages which increases speed of download. Updated required .net framework to 4.8. Updated these docs.
- 3.8.2 Minor tweaks and a donation menu item in the help menu.
- 3.8.3 Corrected bug in Tone Library search routine. Program library shows decimal MSB/LSB/Prog number now when program selected.
- 3.8.4 Added free synth for Native Instruments Reaktor / Player - Roland SH 1000 emulation. Windows and Mac - Runs in Reaktor which is also a Windows VST/ Mac AU.
- 3.8.5 Added note voicing text key. Swapped order of single note voicing updown boxes to match tooltips order. Fixed bug with tooltips on note voicing graph. Playing a note updates the note number and shows note value in the updown boxes (for Tuning, Character or Level).
- 3.8.6 Added a Radio button on the Note Voicing form so you can just edit the voicing map without sending sysex, or send sysex to the RD for the current voicing map or update Map and send sysex immediately at every edit.
- 3.8.7 Added a donation menu item on main form. Updated Blue Synth 3. Corrected bug in midi out short messages such as change bank and program for low parameter values and playing very low Midi note numbers from the virtual keyboard.
- 3.8.8 Added ability to send Midi CC Control Change data to the RD2000 on the Midi settings form.
- 3.8.9 Improved settings form to show sysex, cc and note data better. Added midi thru checkbox.
- 3.9.0 Feb.24 Added ability to use the software via an Ipad, Android or Linux device.
- 3.9.1 Added Midi mapping matrix for Notes and CCs'.

- 3.9.2 Added button to set midi out chnl in matrix to note chnl. Harmonic mode for drawbar mappings. Bug Fixes.
- 3.9.3 Added the ability to map incoming Midi CCs to a Sysex string to send out giving vast control of instruments/vst. This works for 7-bit and 4/4-bit format sysex.
- 3.9.4 Added Midi Learn to the Matrix. Added facility to map Midi CC data to channel After Touch so you can send aftertouch data on a keyboard without aftertouch using a controller like a damper pedal or expression pedal, knob. Etc. Software now stores your previously selected Midi in /out devices in the Windows registry. Added MTC/active sensing and Controller reset to Mapping options.
- 3.9.5 06/04/24 Fixed a bug where current note played (Red bar and progress bar was not showing on the Individual Note Voicing tuning, character and level graph. In harmonic bar mode you can reverse the sliders to act as drawbars on an external instrument using sysex mapping and setting 004 in the right-hand column. Added two examples of midi maps in the installation directory.

USER COMMENTS

Gus - Roland Forums.

You did a great job. Everything is perfect....

V 3.x You have done an exemplary job

RD2000fan - Roland Forums

The RD2000 editor is a great job....

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 ☺!

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LINKS TO SOME OTHER SITES

1. For updates, Fractal Sequencer and a free virtual synth and midi file player/ arpeggiator visit my site <https://stuartpryer.co.uk>
2. Roland Axial Website for more RD sounds www.axial.roland.com
3. Roland Cloud for the German Vpiano expansion etc.
4. For free Windows Midi utilities try MIDI Tools by Mountain Utilities [Mountain Utilities](http://www.midiutils.com/) or Midi Ox at <http://www.midiox.com/>
5. For free internal PC midi routing I recommend LoopMidi [Software | Tobias Erichsen \(tobias-erichsen.de\)](http://www.loopmidi.com/) or LoopBe1 <http://www.nerds.de>.
6. RPTMidi - for connecting a PC Midi to mac Midi. [Software | Tobias Erichsen \(tobias-erichsen.de\)](http://www.rptmidi.com/)
7. KVR Forum and Facebook - great places for electronic music information <http://www.kvraudio.com/>
8. Roland Corporation, <http://www.Roland.com>
9. [Korg http://www.korg.com](http://www.korg.com) Korg Collection 3 - Superb synths plus Wavestate, Opsix and Modwave.

10. Native Instruments - Producers of a fantastic suite of virtual instruments and effects. Special thanks to Stephen Parker General Manager, UK. <http://nativeinstruments.com>
11. Bitwig 5.x - a very modern DAW which runs on Macs or PCs. <http://bitwig.com>
12. Cantabile 3 VST host by topten software. A great windows equivalent to Mainstage. www.cantabilesoftware.com
13. Midi Designer Pro - RD2000 editor by J K Hiser. Midi Designer Pro is a paid for app which can run a free RD 2000 editor on iPads. [MIDI Designer \(for iOS\)](#)

RECOMMENDED BOOKS

- The RD2000 Documentation
- MIDI for the professional - Paul D Lehmann
- Vintage Synthesizers - Mark Vail
- The Synthesizer - Mark Vail

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