Using the KeyStage Master Controller iOS app with a Roland V-Combo VR Keyboard

What is KeyStage?

KeyStage is a Master Instrument Controller iOS (iPad) App through which you can control and play both keyboard internal sound engines and iOS virtual instruments. Check out the App's description at the App Store https://apps.apple.com/gb/app/keystage/id1406132634

How can the Roland V-Combo VR keyboards work in conjunction with KeyStage?

There are 3 areas where Roland VRs and KeyStage can work together:

1. Playing sounds in the Roland VR's GM2 sound engine

2. Translating the Sysex output of the VR's hard organ controls (drawbars etc) into the Change Control' (CC) numbers s required to control iOS virtual organs

3. Playing other iOS virtual instruments. And there are thousands out there! And these can be split and layered with sounds in the Roland VR's GM2 sound engine if required

1. Playing the Roland VR GM2 sound engine via KeyStage

First some advantages and disadvantages

Advantages

ALL the sounds available in the Roland VRs, including the main keyboard sound engine plus the many 'hidden sounds' unearthed by Frank V-Combo Editor, are available as GM2 sounds and can therefore be a played on MIDI Channels 5 to 9, 12, 14 &15 with MIDI IN Mode 2 selected on the VR.

You can escape the limitations of the VR's Registrations. KeyStage is based on 'Song' files which can have many 'Sections' and each 'Section' can have many 'Tracks' with each Section/Track interface containing a 'Part' which can contain either a VR GM2 patch or an iOS virtual instrument patch. Thus you can forget being restricted by 40 Registrations with each one containing just 2 sounds - now you can easily have many hundreds of Songs/Sections with each one having many sounds layered (one for each of MIDI channels 5 to 9, 12, 14 &15). Also, there's no need to split the Keyboard on the VR anymore - you can set the range of notes to be played in each KeyStage 'Part'.

The following image is the 'Main View' of a KeyStage song file of a song in 6 sections (3 intros, verse, chorus, and outro) with a total of 9 tracks (instruments in the left hand column) of which a maximum of 8 are layered (in the Outro section). The 'SL JP6 Fx' patch is the only VR main keyboard sound (although accessed through the GM2 sound engine), all other patches being VR GM2 or VR GM2 Atelier sounds. Note that only channels 5 to 9, 12, 14 &15 are used with a separate channel per track. Note also that some of the patches are confined to specific ranges of the keyboard.


File
Detailed View
Song Properties
Song Mixer
Global Mixer
Live Console
Manual
Preferences
Ride Like The Wind
FX Intro
Intro 1
Intro 2
Verse
Chorus
Outro
GM2/KBD Sounds
GM2/AT Sounds
GM2 Jump Bass
GM2 12Str Guit
GM2 Doos Voice
GM2 Synth Bass
GM2 FX Wind
GM2 FX Thunder
GM2 Drums
SL JP6 Fx
Dig-n-Duke
Jump Brass
12str Guitar
Jazz Doo
Doos Voice
Synth Bass 1
Wind
Thunder
ORCHESTRA
BRUSH 2
FULL RANGE
General Settings
MIDI Connections
External MIDI Control
Instrument Presets
Audio Settings
General
Autosave Enabled
Prompt when changing songs in setlist mode
Low Refresh Rate Mode for Audio Signals
Tutorial Videos
Demo Videos
Privacy Policy
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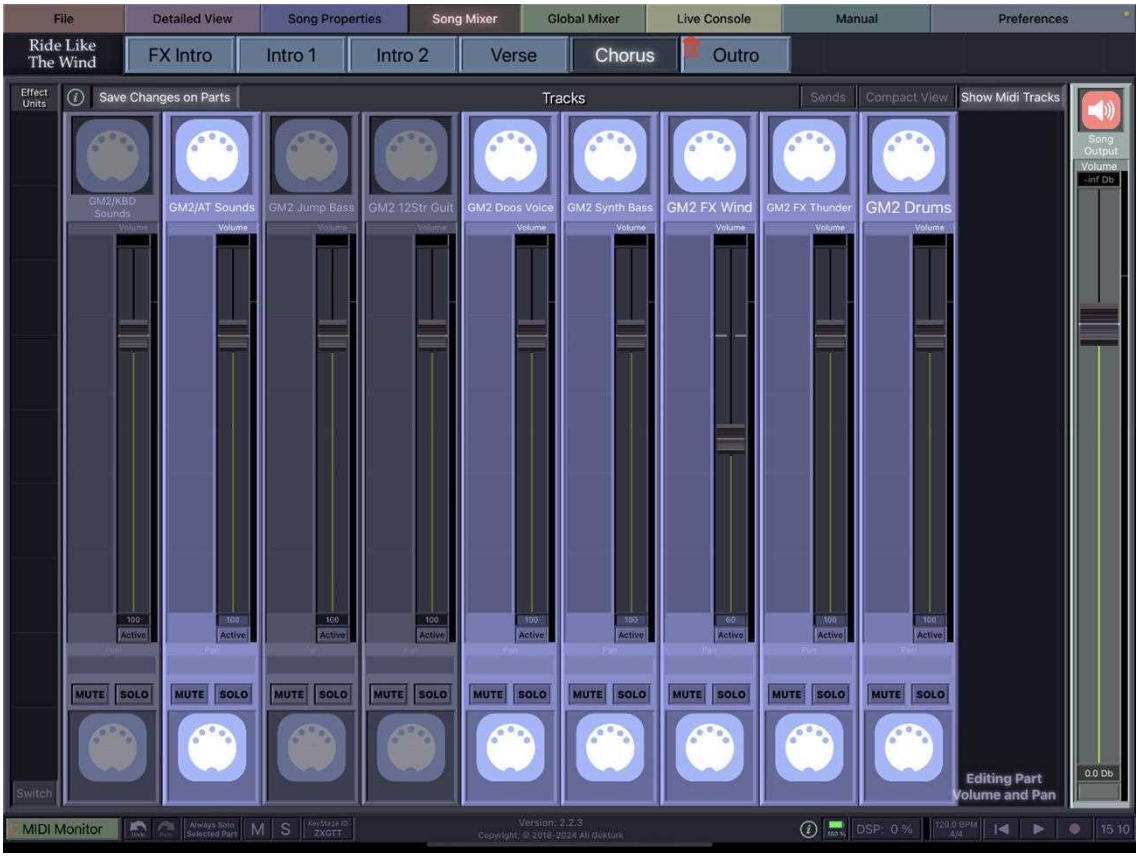
MIDI Monitor
DSP: 0 %


File
Detailed View
Song Properties
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Manual
Preferences
Ride Like The Wind
FX Intro
Intro 1
Intro 2
Verse
Chorus
Outro
Effect Units
Save Changes on Parts
Tracks
Sends
Compact View
Show Midi Tracks
GM2/KBD Sounds
GM2/AT Sounds
GM2 Jump Bass
GM2 12Str Guit
GM2 Doos Voice
GM2 Synth Bass
GM2 FX Wind
GM2 FX Thunder
GM2 Drums
Song Output
Volume
MUTE
SOLO
Switch
Editing Part Volume and Pan
MIDI Monitor
DSP: 0 %

KeyStage has its own Mixer so if you've got a Song with, say, 9 Tracks in it, you can mix the volume of each. The above image shows the 6 tracks active in the Chorus section, with all tracks, apart from 'Wind Fx', set at full volume.

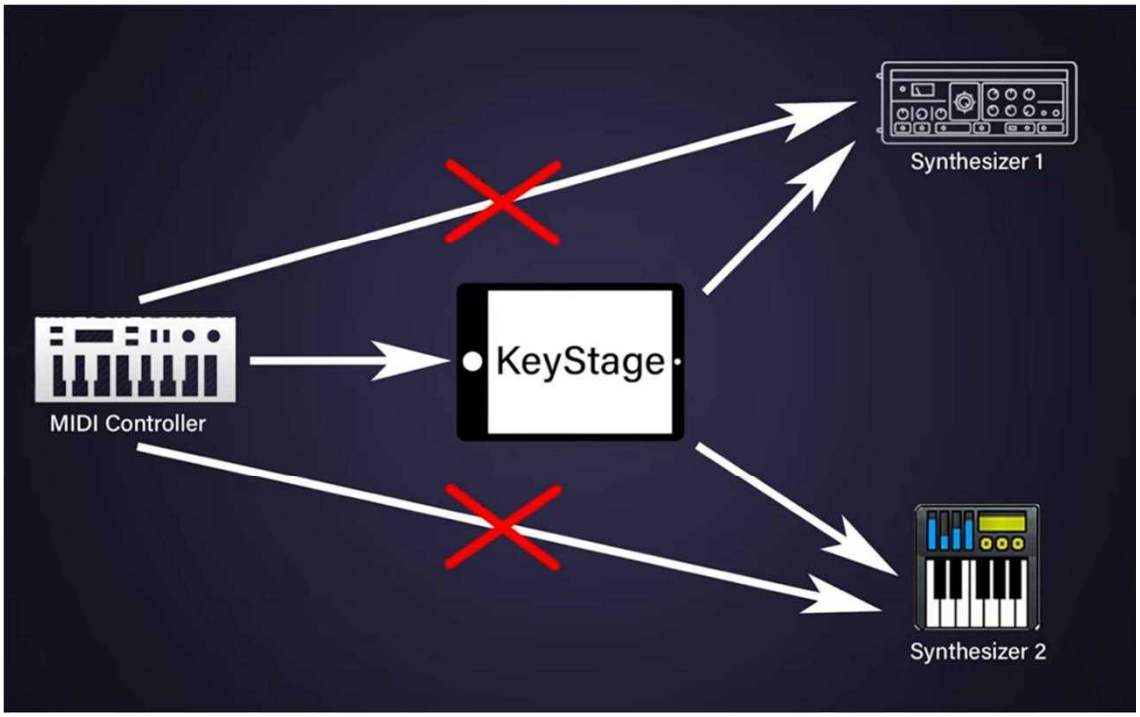
KeyStage has a 'Live Console' which you use when playing live. This can show various data, and the above image shows the 'Info' selection, basically the Tracks and Parts being played for a particular song section. However the most common selection is probably 'Media', this containing PDF or JPG charts or scores which can be assigned to each Section. As a music reader it's rather rudimentary, but if you want to use a more advanced music reader (such as ForScore or Mobile Sheets) you can and you can configure your music reader to change KeyStage Songs or Sections too. Or you can use a Bluetooth pedal to change KeyStage Songs or Sections.

An important feature of KeyStage is its 'Translators'. These modify MIDI signals passing between the keybed and instruments (ei ther hard or soft instruments). The above image shows KeyStage's 'Range Limiter', one of three 'Standard Translators 'and which can be set to limit the range of the keyboard for any one 'Part' (patch). In addition to its Standard Translators, KeyStage also enables users to write their own 'Custom Translators' which allows users to adapt their keyboards to do - pretty much anything they want to do! And if they can't do it, a simple scripting language is provided to allow users to go a stage further.

KeyStage supports Set Lists, however there are two distinct ways of using it - (1) the 'one song per Song file' approach, which requires Set Lists to be set up, or (2) the 'single Song file' approach in

which each song is a single Section (or possibly 2 or 3 adjacent Sections). Using this latter approach you don't need Set Lists as such, you just drag the Sections into the order you want them for an upcoming gig.

Disadvantages



The principle of a master instrument controller such as KeyStage is that it is in total control and that all information, including all note information, passes through it (see above image). Ideally this is done by enabling a 'Local Off' control on the keyboard. However, the Roland VRs don't have a 'Local Off' control. Luckily though, the Roland VRs have separate volume controls for each of Organ, Piano and Synth so, with Organ and Piano modes both selected, if you zero the volume of these two zones, you've pretty much achieved the same thing - sounds will be created locally but you won't be able to hear them.

Although all the VR's main keyboard sounds are available as GM2 sounds, they don't have any of the VR's FX. So if you want FX you have to add it from one of the many IOS FX apps available.

What you need to play the Roland VR's GM2 Sound Engine through KeyStage

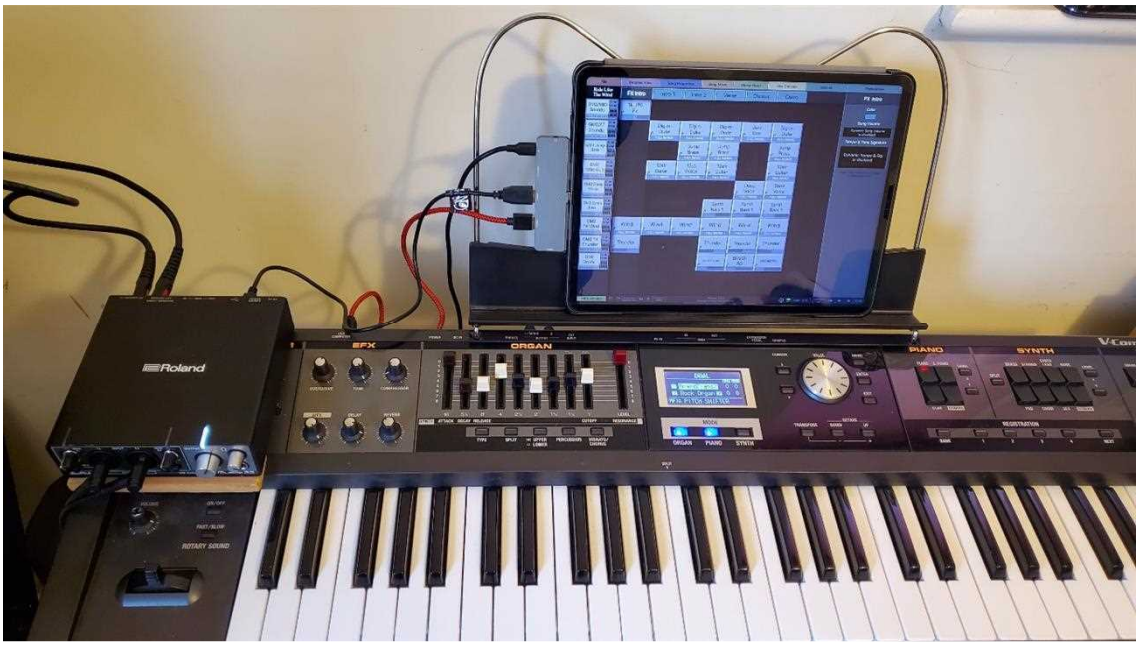
An iPad. The bigger and most recent, the better. As I write, KeyStage's minimum requirement is iOS 13.0. KeyStage is not available for Android.

iPad mount. You've obviously got to mount the iPad somewhere and the choice is either a dedicated iPad mount on a freestanding stand, or a music stand such as the Thomann SP-320, which works well with the 12.9 inch (larger) iPads and which fits the VR-09 perfectly (but unfortunately not the VR-760).

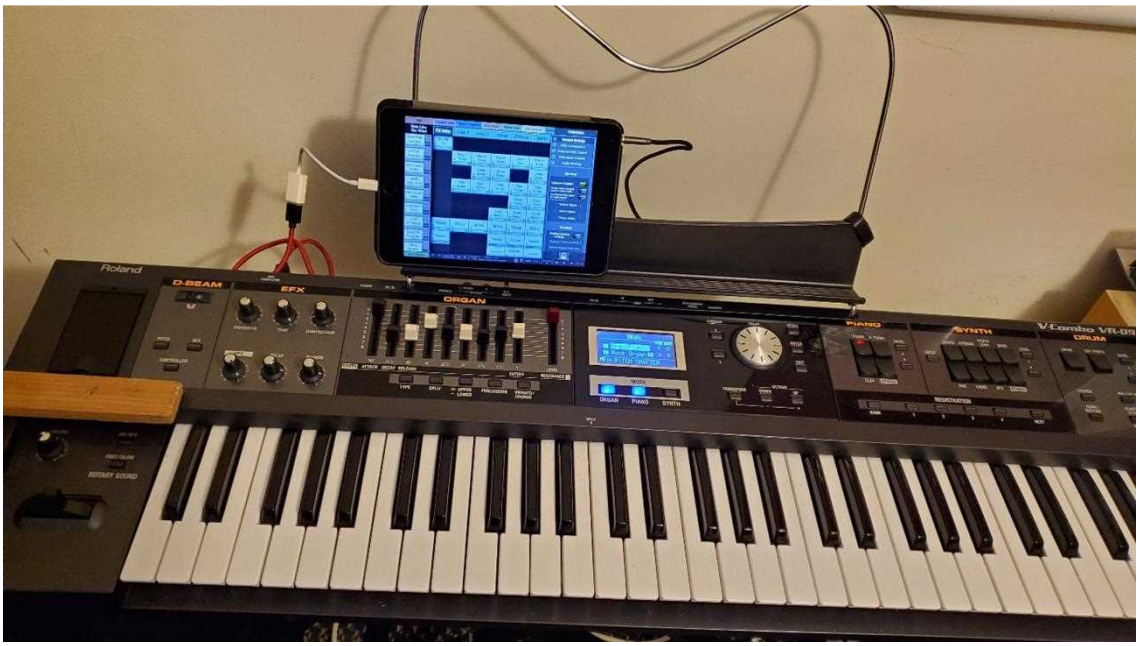
The KeyStage App. You might want to get started with KeyStage Lite https://apps.apple.com/gb/app/keystage-lite/id1437899019 (freeware). This obviously has limitations however the description on the App Store doesn't state what these are.

Physical Connections. This will depend on your iPad. Recent iPads have a USB C port and these require a powered hub dock which will require a power adapter (minimum 60 watts recommended) and a (typically 2 metre) USB C power lead. If you get a hub with 3.5mm audio socket, you'll be able connect between that and the external input socket at the rear of the VR using an audio cable with 3.5mm TRS jacks both ends. You'll also need a standard USB cable with the USB B (square type) connector one end (to connect to the USB B socket at the back of the VR) and a USB A (rectangular type) connector at the other end (to connect to the hub). That's the most basic way to connect a USB C iPad, but it'll get you started.

However, you'll get better sound quality if you invest in a digital audio interface for which you'll need a further standard USB lead (to connect it to the hub dock) and a pair of short audio leads with 6mm jacks plus each end to connect from the audio outs at the rear of the VR to the audio ins of the digital audio interface. Siting a digital audio interface on the VR is tricky but one way of doing it is cutting a short bit of 20 x 12mm timber to size and blue tacking it to the top surface of the VR just forward of the USB stick well, and having the interface bridge over the D beam and adjacent controls (which then become unusable). This will depend on the size of your interface, but certainly a Roland Rubix 2x2 fits quite well in this situation. The following image shows the exact set-up described above. The hub is a 6-in-1 USB-C clip-on type hub and has a 3.5mm audio socket at its top edge which could be used to take audio direct to the external audio input of the VR as a (lower quality) alternative to the audio interface if necessary.



Physically connecting an older iPad. These have the lightning connector and an audio out socket, and you'll need an Apple or equivalent camera connection kit (cck), ideally one that allows a charging cable to be connected, plus the same cables you'd need for the USB C set up described above. See image below (non-charging cck shown).

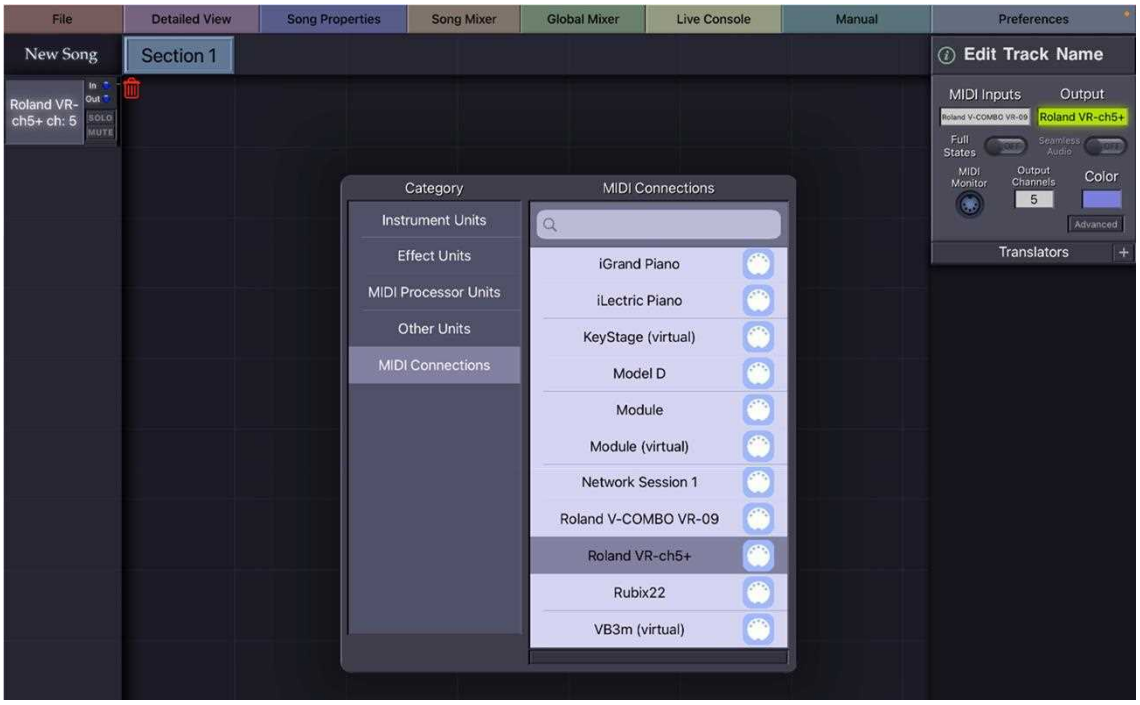


Again that's the basic set up, but it'll get you going and if you then want to upgrade to a digital audio interface you can and you'll need the same additional leads referred to for the USB C installation above, plus a powered hub dock.

Once you've installed KeyStage or KeyStage Lite on your iPad you'd first be well advised to watch the introductory tutorial video and try to grasp the basic principles of KeyStage https://youtu.be/tECnZHNU2wY?si=UUUBMzg0gZzexfWF .You can run this from inside the app itself - it's over an hour long and you won't take it all in at once so maybe run it twice?

OK, now to start the fun bit. In KeyStage, instruments have an 'Instrument Preset'. This is basically a map of all the patches available in that instrument with their addresses. There's also an Instrument Presets Database (Preferences > Instrument Presets Database > Access Database) containing Instrument Presets for a lot of popular keyboards and this contains an instrument preset for the Roland VR-09. However, you should ignore this - it's not good enough for our purposes. User Graham Stow, utilising data unearthed by Frank V-Combo Editor, has created an Instrument Database that contains over 2,500 patches comprising all the main keyboard sound engine's patches (although as GM2 patches and therefore having no FX), all the GM2 patches referred to in the user manual, plus the many 'hidden' sounds unearthed by Frank. There's a certain amount of duplication because some sounds appear under more than one heading and some with different addresses, but that's unavoidable. This instrument database is a text (.txt) file and can be downloaded at https://drive.google.com/file/d/1--qVxOjUd_7fg6_t5Ayyk6LYOhIlz2-a/view?usp=sharing
Once downloaded, to load into KeyStage, copy it into Dropbox, then tap 'Share', then 'Send copy of file', then scroll until you find 'KeyStage' then select it. You'll then have to name the instrument, so name it 'Roland VR-Ch5+' (the purpose of adding '-ch5+' is to remind you that you should only use channels 5 to 9, 12, 14 &15 to access these sounds) .

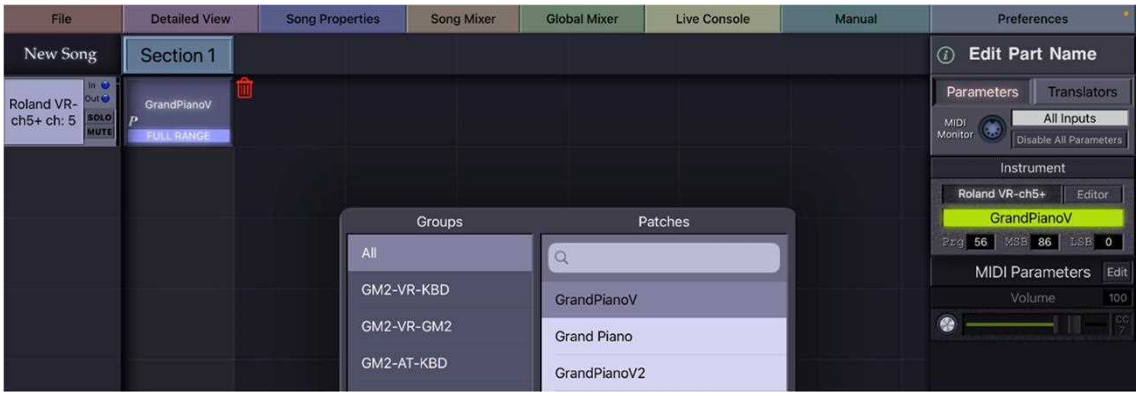
OK, now to get a sound out of it! In KeyStage, tap File > New Song. Then, double tap in the top left corner (under 'New Song') then (top right) tap 'Output' then, in the pop up window, 'MIDI Connections', then 'Roland VR-ch5+'. See next image…



Then select your input (either the VR keyboard itself, if connected, or possibly an input alias for it if you've already set one up - check out KeyStage tutorials and the Manual to understand Input aliases).

Finally ensure the Output Channel is Channel 5 and above.

You've now set up your Roland VR as a KeyStage 'Track'. Now double tap immediately to the right of that and a 'Part' (Part 1) will be created under Section 1. With 'Parameters' selected in the right hand column, tap on the three hyphens under 'Roland VR-ch5+' and a window will pop up giving you access to the instrument database you loaded earlier from which you can explore the 2,500+ sounds now available to you. Select one and give it a play! See image below…



Repeat the above process and set up another Roland VR Track and Part immediately under the ones you just created, but this time select a different patch in the Part. You've now created your first layer!

Experiment with using a different output channel (but always using channels 5 to 9, 12, 14 or 15). Tap back on the first Part you created then tap on 'Translators' (top tight). This will then display the (default) 'Standard Translators' of Range Limiter, Pitch Shifter, and Velocity Translator. Tap on Range Limiter and set the active range of this Part as from (say) C3 and above (note that this is much easier done when you're connected as you can then use the keys to assist you in making your selection).

Repeat the whole process for the second Part but this time set the active range from (say) B2 and below. You've now created your first split! If you want to, you can tap under 'Pitch Shifter', tap '0', then scroll and tap '-12' to reduce the pitch of that Part by an octave. See image below…

Tap on 'Song Mixer' and adjust the volumes of the two tracks you have created, one with the other.

By now you've probably beginning to appreciate the power you have at your fingertips. You could go on like this creating further tracks and many more parts in further sections creating any number of layers and splits, and all without having to change any settings on the Roland VR keyboard itself.

2. How to translate the Sysex messages output by the VRs organ controls (drawbars etc) into the CC messages required by iOS virtual organs

Why do you need to do this?

There are some excellent software organ synths out there that are arguably better than the VR's native organ and they come with a lot of good presets too. They are invariably controlled by MIDI 'Control Change' (CC) messages, however the VR's hard organ controls (drawbars, percussion etc) send Sysex messages, not Control Change messages. However, KeyStage supports 'Custom Translators' that, amongst many other uses, can be used to translate Sysex to CC messages and provide perfect control of soft organ synths. VR-09 user Graham Stow has written a 'VR to VB3m' KeyStage Input Alias that uses a chain of 55 Custom Translators that together allow Roland VRs to control both the GSi VB3m and the VB3II virtual organs. Similarly, he has written a 'VR to B-3X' KeyStage Input Alias that uses a similar chain of Custom Translators that together allow the Roland VRs to control IK Multimedia's Hammond B-3X virtual organ.

2(a). VR to VB3m input MIDI alias

Introduction

The VR to VB3m input MIDI alias utilizes a chain of 55 KeyStage custom translators and, when restored to the KeyStage iOS app and selected, enables the user to easily, and almost completely, control the GSi VB3m iOS organ app from the Organ and FX controls of a Roland V-Combo VR keyboard. It's been developed and tested with VR-09 software v1.03 although it's thought highly likely to work with other VR-09 software versions, the Roland VR-09B, and the Roland VR-730.

The VR to VB3m input MIDI alias is presented 'as is' and no warranty is given or implied. It can be downloaded at
https://drive.google.com/file/d/1-3GQ5rFFDnS_JTUB4KBT733crEESxYyJ/view?usp=sharing

Minimum system requirements

Pretty much as described above under 'What you need to play the Roland VR's GM2 Sound Engine through KeyStage' (although you don't necessarily need the KeyStage 'Instrument Preset' for the VR)

Preparation

Users are first advised to install the KeyStage App and, as a minimum, watch and understand the KeyStage Introductory Video. The more you understand about how KeyStage works, the easier it will be to get the alias installed and working correctly.

Set-Up

In the KeyStage app, create a virtual output port for the VB3m app (Preferences -> MIDI Connections -> Virtual MIDI Ports -> Virtual Outputs -> Create a new virtual Output -> VB3m Create).

Again in KeyStage, set up two tracks for the VB3m app, the first as an Instrument Unit on channel 1 and the second as an Active Audio Unit 'piggybacked' on the first track, on channel 2. Set up a Part for each Track in a Section 1 and for each Part, split the Range using the standard Range Limiter Translator (say upper manual on channel 1 from C3 to G8 and lower manual on Channel 2 from C-2 to B2). There's no need to set ranges using the VB3m app, nor to change any MIDI channels on the VR which can be left as they are, nor is there any need to split the keyboard on the VR itself.

To restore the VR to VB3m input MIDI alias text file into KeyStage, open it in another app on your iPad (for example Dropbox) and export it into KeyStage. Double tap on the Part ('Bright solo' in this case),then drag and reposition the GUI, and your song file should now look like this …

And if you go into Preferences > MIDI Connections > Input Aliases, and select 'VR to VB3m',then tap 'Edit Input Alias', the top of your VR to VB3m input alias (bearing in mind there are many more Custom Translators than the 2 or 3 shown at the top of this file), should look like this…

Tap on 'Done' to close.

Playing the GSi VB3m app though the Roland VR

It's suggested that you close all unnecessary iOS apps and run your iPad in Airplane Mode if resources prove to be tight.

Make sure you have ORGAN or ORGAN & PIANO mode(s) selected on the VR (if Piano alone or Synth modes are selected, the Sysex message transmitted by some of the controls changes and the assignments intended by the alias will not be made). Ensure you set the Level Bar of the VR to Zero to mute the VR's native organ.

To clarify, with the exception of the Overdrive knob, all of the VR's EFX controls operate as on/off switches with left of 12 noon being off, and right of 12 noon being on.

Finally, the Mapping Chart below confirms how the VB3m parameters are mapped to the hard controls on the VR.

2(b) VR to B-3X input MIDI alias

Introduction

The VR to B-3X input MIDI alias utilizes a chain of 59 KeyStage custom translators and, when restored to the KeyStage iOS app and selected, enables the user to easily, and almost completely, control IK Multimedia's Hammond B-3X iOS organ app from the Organ and EFX controls of a Roland V-Combo VR keyboard. It's been developed and tested with VR-09 software v1.03 although it's thought likely to work with other VR-09 software versions, the Roland VR-09B, and possibly the Roland VR-730. If it doesn't work with other VR-09 software versions or these latter two Keyboards, it is thought it could be easily adapted to work with them.

The VR to B-3X input MIDI alias is presented 'as is' and no warranty is given or implied. It can be downloaded at
https://drive.google.com/file/d/1-96mq8uf7aPBiZZAPrbQv34ENDz7Azig/view?usp=sharing

Minimum system requirements

Again, pretty much as described above under 'What you need to play the Roland VR's GM2 Sound Engine through KeyStage'.

Preparation

Again, users are first advised to install the KeyStage App and, as a minimum, watch and understand the KeyStage Introductory Video.

Set-Up

In the Hammond B-3X app, go to the Settings screen and in the MIDI CHANNELS box, set Upper Manual and Program Change to channel 11, Lower Manual to channel 12, and Pedal to channel 13.

Again in B-3X, check that all the CCs displayed on the B-3X under Controls View -> MIDI CONTROLLERS on the B-3X app (right side column) are non-inverted and unlatched (i.e. all highlights removed, if any).

In the KeyStage app, create a virtual output port for the Hammond B-3X (Preferences -> MIDI Connections -> Virtual Outputs -> Create a new virtual Output -> B-3X Create)

Again in KeyStage, set up two tracks for the Hammond B-3X, one on channel 11 and one on channel 12. Then go to KeyStage's 'Main View' and split the parts for each track, say upper manual on channel 11 from C3 to G8 and lower manual on Channel 12 from C-2 to B2.

To restore the VR-09 to B-3X input MIDI alias text file into KeyStage, open it in another app on your iPad and export it into KeyStage.

Now refer to the Mapping Chart for B-3X hereunder. The CCs displayed on the B-3X under Controls View -> MIDI CONTROLLERS on the B-3X app (right side column) **MUST** be identical to those in the alias (second left column). It's very unlikely that these will be identical 'out of the box' - your B-3X may be on factory CCs, in which case the instances where the alias differs from these are highlighted in **red** (which you need to change from) and **green** (which you need to change to) on the mapping chart. There are three ways of achieving this: (1) where necessary, change the CCs in the B-3X app to match those in the alias (which is the option the Mapping Chart assumes you'll use), (2) where necessary, change the CCs used in the 'Output' field of the relevant KeyStage custom translators to match that used by the B-3X app and 'Save Current State' of all those you change, or (3) a combination of (1) and (2) above. If you chose method (2), the KeyStage custom translators you'll need to change are shown in the second column from the right. The CCs column headed 'User' is intended for you to note down the CCs your B-3X uses so you can work out those you need to change and decide where they are best changed (i.e. in the B-3X app or in the KeyStage translators)

Playing the Hammond B-3X app though a Roland VR keyboard

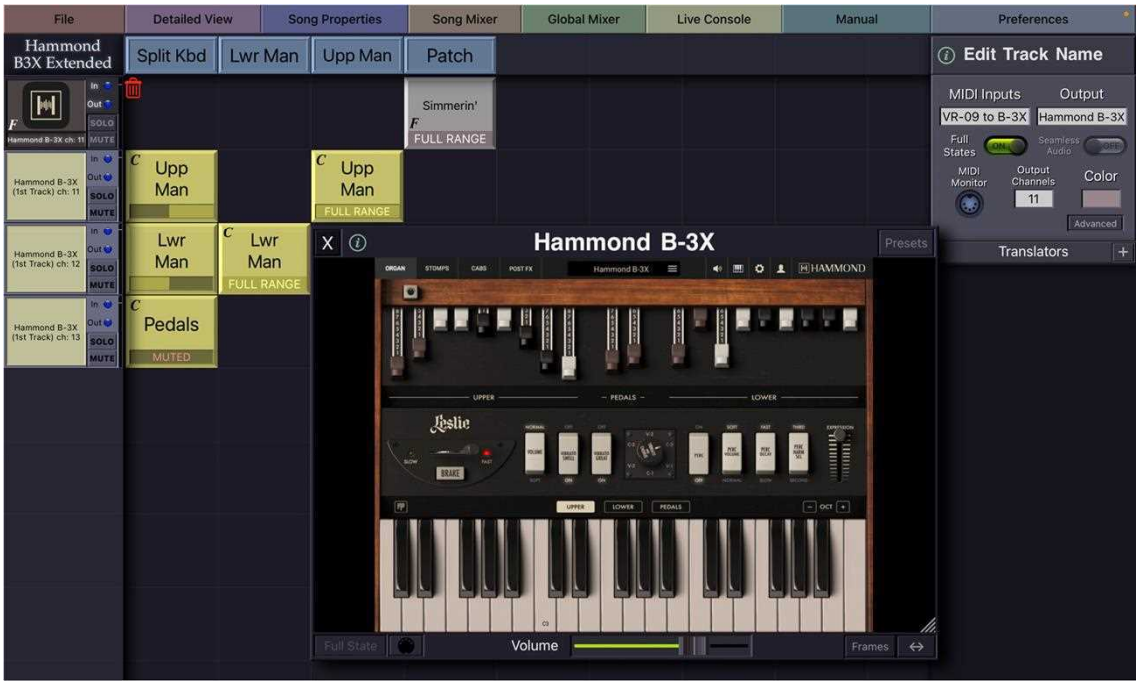
In iPad Settings, scroll down and click on the Hammond B-3X app and enable Background Audio. It's also suggested that you close all unnecessary iOS apps and run your iPad in Airplane Mode if resources prove to be tight.

Make sure you have ORGAN or ORGAN & PIANO mode(s) selected on the VR (if Piano alone or Synth modes are selected, the Sysex message transmitted by some of the controls changes and the assignments intended by the alias will not be made). Ensure you set the Level Bar of the VR to Zero to mute the VR's native organ.

Again, with the exception of the Overdrive knob, all of the VR's EFX controls operate as on/off switches with left of 12 noon being off, and right of 12 noon being on.

The Mapping Chart below confirms how the B-3X parameters are mapped to the hard controls on the VR.

Finally, there is another interesting way to play soft organs using KeyStage - take a look at the next image. With this set up, particularly if you use a Bluetooth pedal to change sections, you can move between split keyboard, lower manual and upper manual set ups, very quickly, which can be very useful if you're playing jazz organ. But for it to work, you first need to visit Song Properties and turn off 'Suspend inactive plugins to improve performance', otherwise the system will sense that the track containing the patch is inactive, and turn it off to conserve resources. This method can equally be used for the VB3m organ discussed earlier



3. Using the Roland V-Combo VR keyboards to play iOS instruments via KeyStage

Minimum system requirements

Pretty much as described above under 'What you need to play the Roland VR's GM2 Sound Engine through KeyStage' (although you don't necessarily need the KeyStage 'Instrument Preset' for the VR)

Getting started with iOS instrument apps

If you don't have any, download a couple of iOS instruments apps. Try to ensure these are AUv3 (Audio Unit compatible) as they then open as Audio Units directly in KeyStage and don't need to be run in the background. Two good (and free or low-cost) ones to get you started are Numa Player (free) https://apps.apple.com/gb/app/numa-player/id1601231132
and House: Mark 1 (low cost) https://apps.apple.com/gb/app/house-mark-i/id1481734663

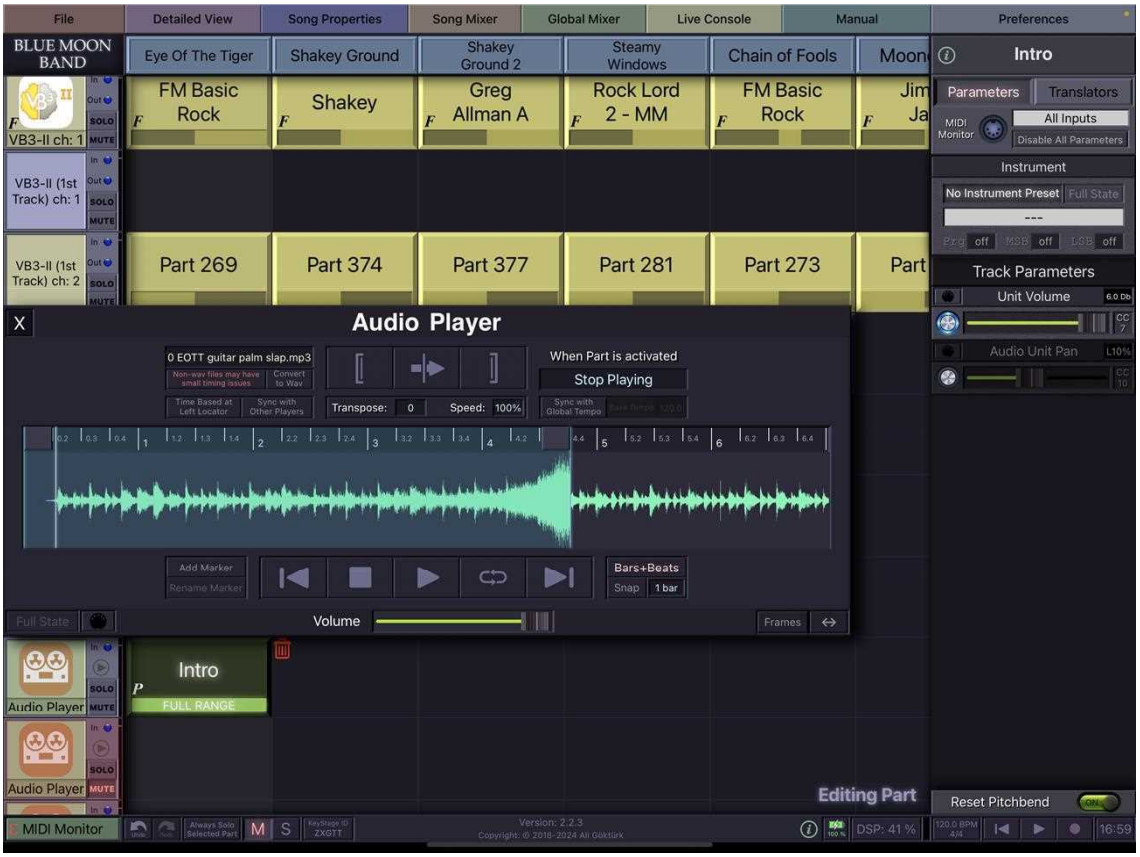
In KeyStage, under Preferences -> Input Aliases, tap on Create New Input Alias (call it whatever you want) then select that it as your MIDI Input.

If your iOS instrument app works only on a certain MIDI channel, change your Output Channel to the same channel.

Again in KeyStage, create a Track on the left side, then in Preferences -> Output, choose the Instrument Units category and your new app(s) will show up. Tap on the app you want and it will load. Tap to its right and a Part will be created. Possibly you can then select an Audio Unit Preset (depending on whether the instrument has any Factory Presets or not), but if it doesn't you can create your own as KeyStage Presets by double tapping on the track, selecting the patch you want within the app itself, then tapping on Presets in the top right corner of the Instrument Unit window, and saving the current state as a KeyStage Preset.

One thing to bear in mind is that it's entirely possible to split and layer both VR patches and IOS instrument patches if you wish to.

The following image is taken from the main view of the single song file the writer is using for live gigs with his current band. Note the player unit which is set up to play the approx 10 second 'guitar palm slap' intro sampled from the actual recording of 'Eye Of The Tiger'. Only AUV3 Instrument Unit outputs are shown here – there are a few Roland VR MIDI outputs elsewhere in the file, but not many. This is the direction KeyStage can take you in – yes it does open up the full range of sounds within the Roland VR keyboard series to you, but it also opens your eyes to the countless and expanding sounds in the iOS world, and once there there may be no going back. And you also start thinking about little tricks you can do with KeyStage – like programming a small range of maybe just 4 notes that will add a major third to them and allow you to play a fast passage that you would otherwise find impossible to play. There's a lot to learn but the above should get you started. KeyStage can make a good keyboard sound even better.



Enjoy!

Roland V-Combo VR Keyboard to GSi VB3m iOS App input MIDI alias

MAPPING CHART

GSi VB3m v 1.2.3		KeyStage VR to VB3m input MIDI alias Custom Translators			VB3m parameters mapped to the following on the Roland V-Combo VR
Parameters	CCs	No.	Names	Names of translators assigning VB3m CCs	
Vibrato Upper	31	2	Vibrato Swell 1&2	Vibrato Swell 2	(VIBRATO/CHORUS button
Vibrato Lower	30	1	Vibrato Great	Vibrato Great	(VIBRATO/CHORUS button
Vibrato Select	73	8	Vibrato Type 1-8	Vibrato Type 8	VIBRATO/CHORUS button and VALUE dial
Percussion On/Off	66	7	Percussion On/Off 1-7	Percussion On/Off 2-7	PERCUSSION button
Percussion Volume	70	3	Percussion Volume 1-3	Percussion Volume 2&3	VALUE dial and CURSOR buttons
Percussion Decay	71	4	Percussion Decay 1-4	Percussion Decay 1-4	VALUE dial and CURSOR buttons
Percussion Harmonic	72	4	Percussion Harmonic 1-4	Percussion Harmonic 1-4	VALUE dial and CURSOR buttons
Swell Pedal	11	No custom translators needed			EXPRESSION PEDAL works 'as is'
Drawbar Upper 1	12	2	Upper Drawbar 1-1&2	Upper Drawbar 1-2	16' Harmonic Bar
Drawbar Upper 2	13	2	Upper Drawbar 2-1&2	Upper Drawbar 2-2	5 1/3' Harmonic Bar
Drawbar Upper 3	14	2	Upper Drawbar 3-1&2	Upper Drawbar 3-2	8' Harmonic Bar
Drawbar Upper 4	15	2	Upper Drawbar 4-1&2	Upper Drawbar 4-2	4' Harmonic Bar
Drawbar Upper 5	16	2	Upper Drawbar 5-1&2	Upper Drawbar 5-2	2 2/3' Harmonic Bar
Drawbar Upper 6	17	2	Upper Drawbar 6-1&2	Upper Drawbar 6-2	2' Harmonic Bar
Drawbar Upper 7	18	2	Upper Drawbar 7-1&2	Upper Drawbar 7-2	1 3/5' Harmonic Bar
Drawbar Upper 8	19	2	Upper Drawbar 8-1&2	Upper Drawbar 8-2	1 1/3' Harmonic Bar
Drawbar Upper 9	20	2	Upper Drawbar 9-1&2	Upper Drawbar 9-2	1' Harmonic Bar
Drawbar Lower 1	21		Not translated (not enough drawbars on VR)		-
Drawbar Lower 2	22		Not translated (not enough drawbars on VR)		-
Drawbar Lower 3	23		Not translated (not enough drawbars on VR)		-
Drawbar Lower 4	24		Not translated (not enough drawbars on VR)		-
Drawbar Lower 5	25		Not translated (not enough drawbars on VR)		-
Drawbar Lower 6	26		Not translated (not enough drawbars on VR)		-
Drawbar Lower 7	27		Not translated (not enough drawbars on VR)		-
Drawbar Lower 8	28		Not translated (not enough drawbars on VR)		-
Drawbar Lower 9	29		Not translated (not enough drawbars on VR)		-
Drawbar Pedal 1	33		Not translated (not enough drawbars on VR)		-
Drawbar Pedal 2	35		Not translated (not enough drawbars on VR)		-
Amp Select	85	1	Amp Select (MFX knob)	Amp Select (MFX knob)	MFX knob (4 positions, L to R)
Rotary Lever	1	1	Leslie Fast/Slow	Leslie Fast/Slow	ROTARY SOUND (FAST/SLOW) button
Rotary Lever (via Sustain)	64				Set SUSTAIN PEDAL Switch to Rotary Fast/Slow under Menu > Controller > Damper Assign. D-BEAM/ CONTROLLER works with this too.
Rotary Lever (Brake)	1	1	Leslie Brake	Leslie Brake	ROTARY SOUND (ON/OFF) button
Mic Distance	93		Not translated (not enough knobs on VR)		-
Mic Balance	90		Not translated (not enough knobs on VR)		-
Volume	7	Not translated (suggest set in KeyStage 'Part' and adjust with KeyStage 'Live Console/Main Mixer' and/or VR volume control)			VOLUME
Bass	8	1	Bass (TONE knob)	Bass (TONE knob)	TONE knob
Treble	10	1	Treble (COMPRESSOR knob)	Treble (COMPRESSOR knob)	COMPRESSOR knob
KeyClick	75	1	KeyClick (DELAY knob)	KeyClick (DELAY knob)	DELAY knob
Drive	76	1	Drive (OVERDRIVE knob)	Drive (OVERDRIVE knob)	OVERDRIVE knob
Reverb	91	1	Reverb (REVERB knob)	Reverb (REVERB knob)	REVERB knob
Split On	OFF		Not translated (not enough knobs on VR)		-
Split Point	OFF		Not translated (not enough knobs on VR)		-
Pedal to Lower	OFF		Not translated (not enough knobs on VR)		-
Pedal Decay	56		Not translated (not enough knobs on VR)		-

Roland V-Combo VR Keyboard to IK Multimedia Hammond B-3X iOS App input MIDI alias

MAPPING CHART

NOTE: The MIDI Controller CC numbers in the Hammond app **MUST** be changed to equate with those in the KeyStage input MIDI alias (i.e. from **red** to **green**)

Hammond B-3X				KeyStage VR > B-3X input MIDI alias Custom Translators			Hammond B-3X controls mapped to the following on the Roland VR
MIDI Controller (all non-inverted and unlatched)	CCs			No.	Names	Names of translators assigning B-3X CCs	
	VR to B-3X input MIDI alias	Factory	User				
Leslie Speed	1	1		1	Leslie Fast/Slow	Leslie Fast/Slow	ROTARY SOUND (FAST/SLOW) button
Leslie Brake	93	93		1	Leslie Brake	Leslie Brake	ROTARY SOUND (ON/OFF) button
Master Volume	7	7		Not translated (suggest set in KeyStage 'Part' and adjust in KeyStage 'Live Console')			-
Expression	11	11		No custom translators needed			EXPRESSION PEDAL works 'as is'
Leslie Amp Gain	60	42		1	Leslie Gain	Leslie Gain	OVERDRIVE knob
Percussion On/Off	66	36		7	Percussion On/Off 1-7	Percussion On/Off 2-7	PERCUSSION button
Percussion 2nd/3rd	72	44		4	Percussion Harmonic 1-4	Percussion Harmonic 1-4	VALUE dial and CURSOR buttons
Percussion Volume	70	37		3	Percussion Volume 1-3	Percussion Volume 2&3	VALUE dial and CURSOR buttons
Percussion Decay	71	43		4	Percussion Decay 1-4	Percussion Decay 1-4	VALUE dial and CURSOR buttons
Vibrato Type	38	38		8	Vibrato Type 1-8	Vibrato Type 8	VIBRATO/CHORUS button and VALUE dial
Vibrato Great	30	39		1	Vibrato Great	Vibrato Great	(VIBRATO/CHORUS button
Vibrato Swell	31	40		2	Vibrato Swell 1&2	Vibrato Swell 2	(VIBRATO/CHORUS button
Volume	41	41			Not translated		-
Upper Drawbar 1	12	12		2	Upper Drawbar 1-1&2	Upper Drawbar 1-2	16' Harmonic Bar
Upper Drawbar 2	13	13		2	Upper Drawbar 2-1&2	Upper Drawbar 2-2	5 1/3' Harmonic Bar
Upper Drawbar 3	14	14		2	Upper Drawbar 3-1&2	Upper Drawbar 3-2	8' Harmonic Bar
Upper Drawbar 4	15	15		2	Upper Drawbar 4-1&2	Upper Drawbar 4-2	4' Harmonic Bar
Upper Drawbar 5	16	16		2	Upper Drawbar 5-1&2	Upper Drawbar 5-2	2 2/3' Harmonic Bar
Upper Drawbar 6	17	17		2	Upper Drawbar 6-1&2	Upper Drawbar 6-2	2' Harmonic Bar
Upper Drawbar 7	18	18		2	Upper Drawbar 7-1&2	Upper Drawbar 7-2	1 3/5' Harmonic Bar
Upper Drawbar 8	19	19		2	Upper Drawbar 8-1&2	Upper Drawbar 8-2	1 1/3' Harmonic Bar
Upper Drawbar 9	20	20		2	Upper Drawbar 9-1&2	Upper Drawbar 9-2	1' Harmonic Bar
Lower Drawbar 1	21	21			Not translated		-
Lower Drawbar 2	22	22			Not translated		-
Lower Drawbar 3	23	23			Not translated		-
Lower Drawbar 4	24	24			Not translated		-
Lower Drawbar 5	25	25			Not translated		-
Lower Drawbar 6	26	26			Not translated		-
Lower Drawbar 7	27	27			Not translated		-
Lower Drawbar 8	28	28			Not translated		-
Lower Drawbar 9	29	29			Not translated		-
Pedal Drawbar 1	33	33			Not translated		-
Pedal Drawbar 2	35	35			Not translated		-
Overscream On	95	50		1	Overscream On/Off	Overscream On/Off	MFX knob (off < noon > on)
EQ PG On	47	51			Not translated		-
Chorus C1 On	43	52		1	Chorus C1 On/Off	Chorus C1 On/Off	TONE knob (off < noon > on)
Spring Reverb On	51	53		1	Spring Reverb On/Off	Spring Reverb On/Off	DELAY knob (off < noon > on)
Wah On	65	54		3	Wah 1-3	Wah 2&3	LEVEL bar (off ^; on ˅)
Wah Pedal	73	55		1	Wah 4	Wah 4	LEVEL bar (˅^)
Compressor On	39	56		1	Compressor On/Off	Compressor On/Off	COMPRESSOR knob (off < noon > on)
EQ-81 On	98	57			Not translated		-
Reverb On	54	58		1	Reverb On/Off	Reverb On/Off	REVERB knob (off < noon > on)
Sustain	64	64		No custom translators needed to control Leslie Speed			Set SUSTAIN PEDAL Switch to Rotary Fast/Slow under Menu > Controller > Damper Assign