Soundcraft
STUDER

HARMAN

APPLICATION NOTE

Running Plugins & Pro Tools on Soundcraft Vi Series Consoles



Vi SERIES

Contents

INTRODUCTION 3

Hardware Required 4

Software Required - Plugins 5

Software Required – Recording/Virtual Soundcheck 6

CONNECTING UP – Vi2/4/6 7

CONNECTING UP – Vi1 8

SETTING UP THE CONSOLE FOR PLUGINS 11

SETTING UP THE CONSOLE FOR RECORDING/VIRTUAL SOUNDCHECK .. 12

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INTRODUCTION

You thought it was only possible to run Plugin FX and record to Pro Tools on one make of console? Think again! In fact it's really easy to add the capability to run plug-ins on the Soundcraft Vi Series consoles, and/or to get a 'Virtual Soundcheck' or show archiving capability, using either Pro Tools or any other multitrack hard disk recording software.

Due to the popularity of a certain US-designed range of live consoles over the last couple of years, there has been an upsurge in interest among sound engineers – including Vi users - in the capability to use their own choice of exotic Plugin effects processing to augment the high-quality Lexicon reverb and delay effects and dynamics processing that are already built into the Vi consoles.

This guide explains how to use hardware from RME, and software from highly respected plug-in manufacturer, Waves, to add plug-ins to any Vi console.

With the same hardware, you can also add the Virtual Soundcheck capability, which depending on the processing power and processor speed of your host computer, can be run at the same time as a limited number of plug-ins.

Most of the steps described in this guide are also applicable to the Soundcraft® Si1/2/3 (and Si1+, Si2+, and Si3+) and Soundcraft® Si Compact range of consoles if an optional optical MADI card is fitted, with the exception that plug-ins cannot be set up as Insert FX on these consoles.

In this guide:

- Hardware Required
- Software Required
- Connecting up –Vi2/4/6
- Connecting up –Vi1
- Setting up the console

Hardware Required

The following hardware is needed:
(*See the later section CONNECTING UP for how to set up this hardware*).



Apple Macbook Pro or other portable computer (PC or Mac) to run the Plug-ins and recording software. Must have an Expresscard interface slot to accept the RME audio interface.
Note: Currently, only the 17" Macbook Pro still has the Expresscard interface, but older versions of smaller models do have the slot. For newer Macbooks, an additional Expresscard to Thunderbolt adaptor is required (see below).

iLok usb Licensing Key, with Needed to purchase, download software, and the required http://www.ilok.com/



account.
and run the Waves Multirack plugin files themselves.



RME MADIface 64ch MADI audio interface, provides up to 64 channels of audio in and out of the Macbook, connecting via MADI to the console.http://www.rme-audio.de

For newer Macbooks without Expresscard slot, it's possible to use the Sonnet Echo™ ExpressCard adapter.
http://www.sonnettech.com/



You will also need an **optical fibre cable** to connect from the RME Interface to the Vi's MADI card. The type needed is SC-SC Duplex multimode fibre.



Optional: Any USB-MIDI Interface (eg Edirol UM-2G or similar), allows snapshot changes on console to trigger plug-in setting changes on Macbook. If you use snapshots a lot on the console, this is a worthwhile addition, but otherwise is not needed.



Software Required - Plugins

The following software is recommended for using Plugins:

Waves Multirack Native Plugin Host software

This is the software that runs on the laptop and provides a 'shell' for the Plugins themselves, and also handles the audio routing to the RME interface, and preset storage and recall. The Multirack Native software currently costs $375, and can be purchased from the Waves Live website, currently at:
http://www.waveslive.com/html/multirack.aspx





Waves Plugins Bundles

The Mutirack host software may come with a small selection of Plugins to get you started (*depends on current promotional offers –see Waves website for latest info*), but to get the best out of the system you will need to purchase one of the many Plugin bundles that are available from the Waves website. There are various packages available, each one having a different emphasis on the type of effects provided. The **Mercury** bundle is the most comprehensive, including almost all of the Waves range.







Using the iLok to authorise your Plugins

As mentioned earlier you will need to purchase an iLok in order to authorise the Waves software and run it on your Macbook or PC. When you buy an iLok, you set up a web-based account which allows you to link the Waves software you purchase online, to your iLok usb stick. Once the Waves software is installed on your computer, it will then look for your iLok on startup, and will only run if your iLok is plugged into the computer. To purchase an iLok and set up an account, visit:
http://www.ilok.com/

Software Required – Recording/Virtual Soundcheck

The following software is recommended for show recording or Virtual Soundcheck:



AVID Pro Tools (current version 10)

The industry standard recording software, now more accessible thanks to the ability to record via third-party audio interfaces such as the RME MADIface, using standard ASIO drivers.

Although much of the functionality in Pro Tools is overkill for simply capturing live audio, if you need to be able to export the result as a Pro Tools session for someone else to mix down, it's the only choice.
http://www.avid.com/US/products/Pro-Tools-Software/

Steinberg Nuendo Live

This is a new version of the popular Nuendo recording software that has been purpose designed for live use, with useful features such as autosave function, 1 sec pre-record buffer, marker and text notes. insertion.



For more information see:

http://www.steinberg.net/en/products/nuendo/nuendo_live.html

Apple Logic Pro & Ableton Live

Another well-known and trusted DAW package, along with its slightly different sibling, Ableton.
http://store.apple.com/uk/product/MB795Z/A





CONNECTING UP – Vi2/4/6

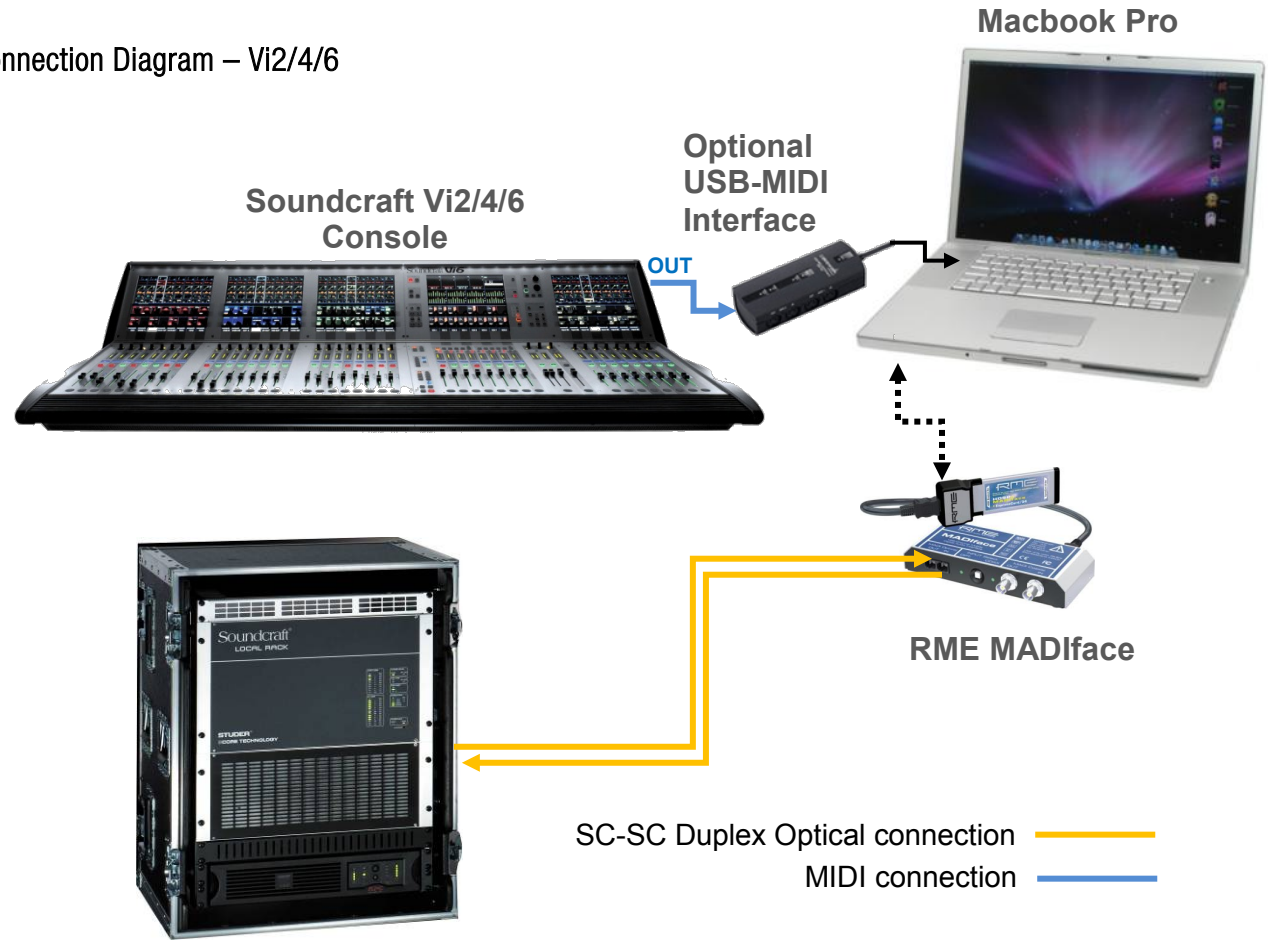
On a Vi2, 4 or 6 console, the Local Rack is normally fitted as standard with an additional Optical MADI card, intended specifically for the connection of recording or Plugin devices.

The Macbook is simply connected to this MADI card using the RME MADIface interface and an SC-SC duplex fibre optic cable. The patching for the Plugins/recording is then set up directly from the MADI tab in the console patch.

The only exception to this will be when a second Stagebox is being used. In this case, a third MADI card would have to be purchased, and one of the other I/O cards (eg the AES/EBU card) would have to be removed to make room

If required, a standard MIDI cable can be connected from one of the MIDI outs on the rear of the Vi control surface, to the USB-MIDI interface on the Mac.

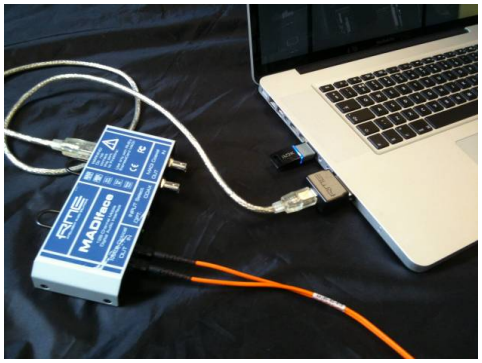
Connection Diagram – Vi2/4/6



Local Rack MADI connection



Macbook & RME MADIface connection



CONNECTING UP – Vi1

The Setup for Vi1 is the same as for the other Vis with respect to the connection of the Macbook, RME interface and MIDI interface (if used), however the situation with where to connect the RME's MADI connections is different on the Vi1, and there are more limitations to be aware of.

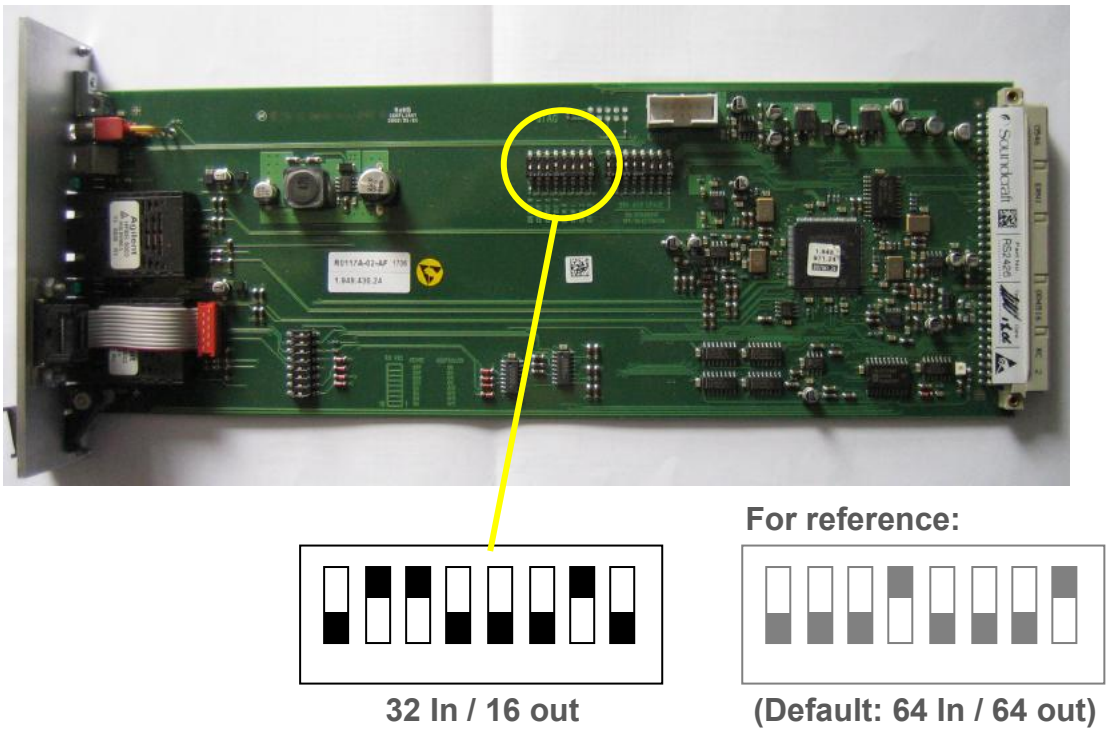
The Vi1 has only a single option card slot on the console itself. If no Stagebox is being used, the situation is simple; all that is needed is to install an Optical MADI card (Part number RS2426SP, not supplied as standard) into the console's expansion slot. See the connection diagram on the next page.

This MADI card will show up in the console's Local I/O patch and therefore allows up to 64 channels to be shared between use for Plugins and recording/playback, via the RME MADIface interface.

If a Stagebox is being used on Vi1, the situation is more complicated because it is no longer possible to connect the RME interface to the back of the console.

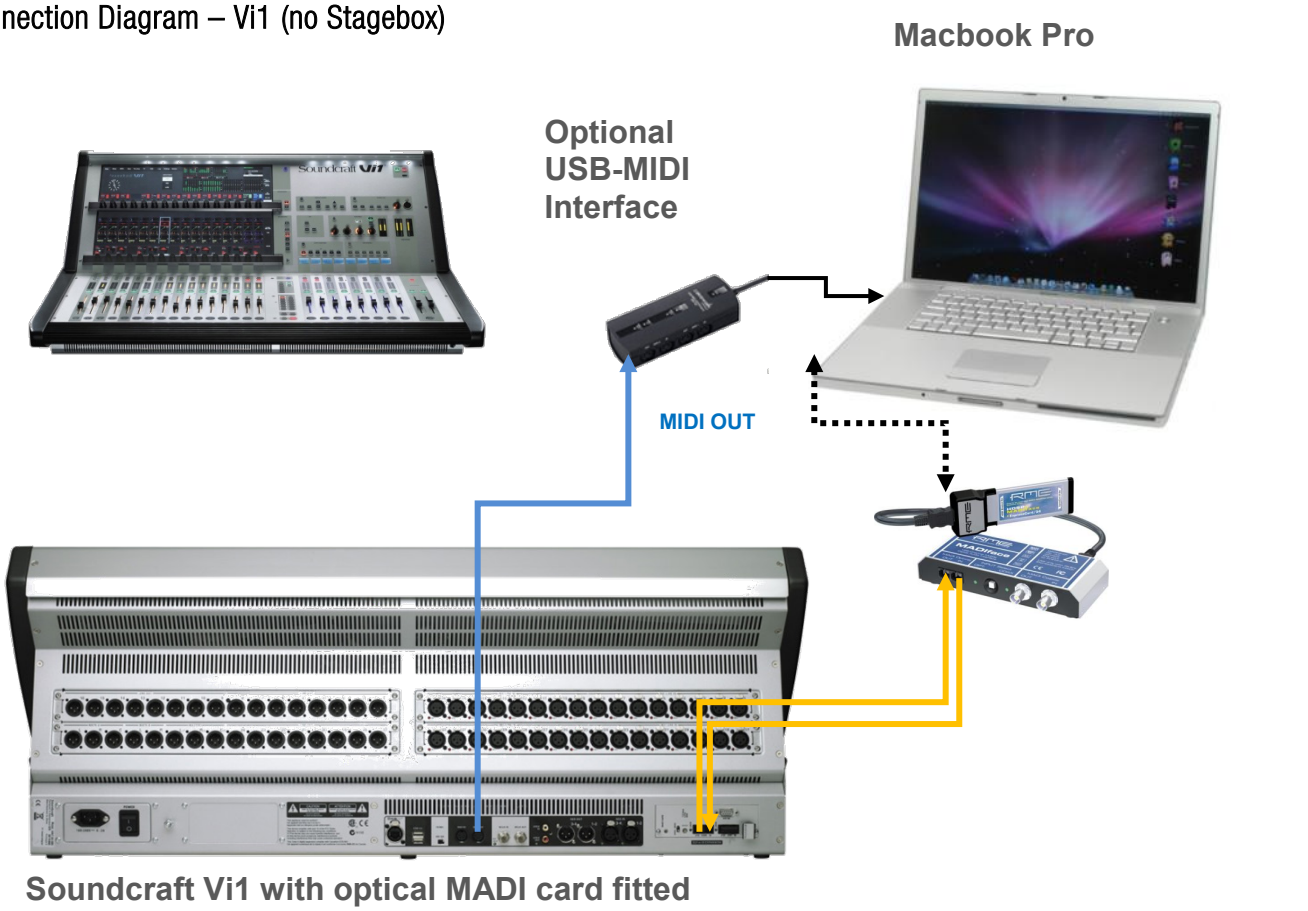
The only option here is to use a Compact Stagebox, because this has an option slot that allows the same type of optical MADI card fitted to the console, to be installed. Here there is the limitation that you are not able to use the full 64ch capacity of the MADI card, because the link between Stagebox and console only contains 64 channels, and some of these are already used for the inputs and outputs on the Stagebox itself. In practice, with the standard configuration of 32 in / 16 out on the CSB, this means the optical MADI card for Plugins/recording can have a channel count of 48 out (record channels or sends to Plugins) and 32 in (playback or returns from Plugins).

Note: When you install the optical MADI card into the CSB, you must set the DIP switches on the card for this 48 out/32 in configuration.
See the picture below for how to set the switches:

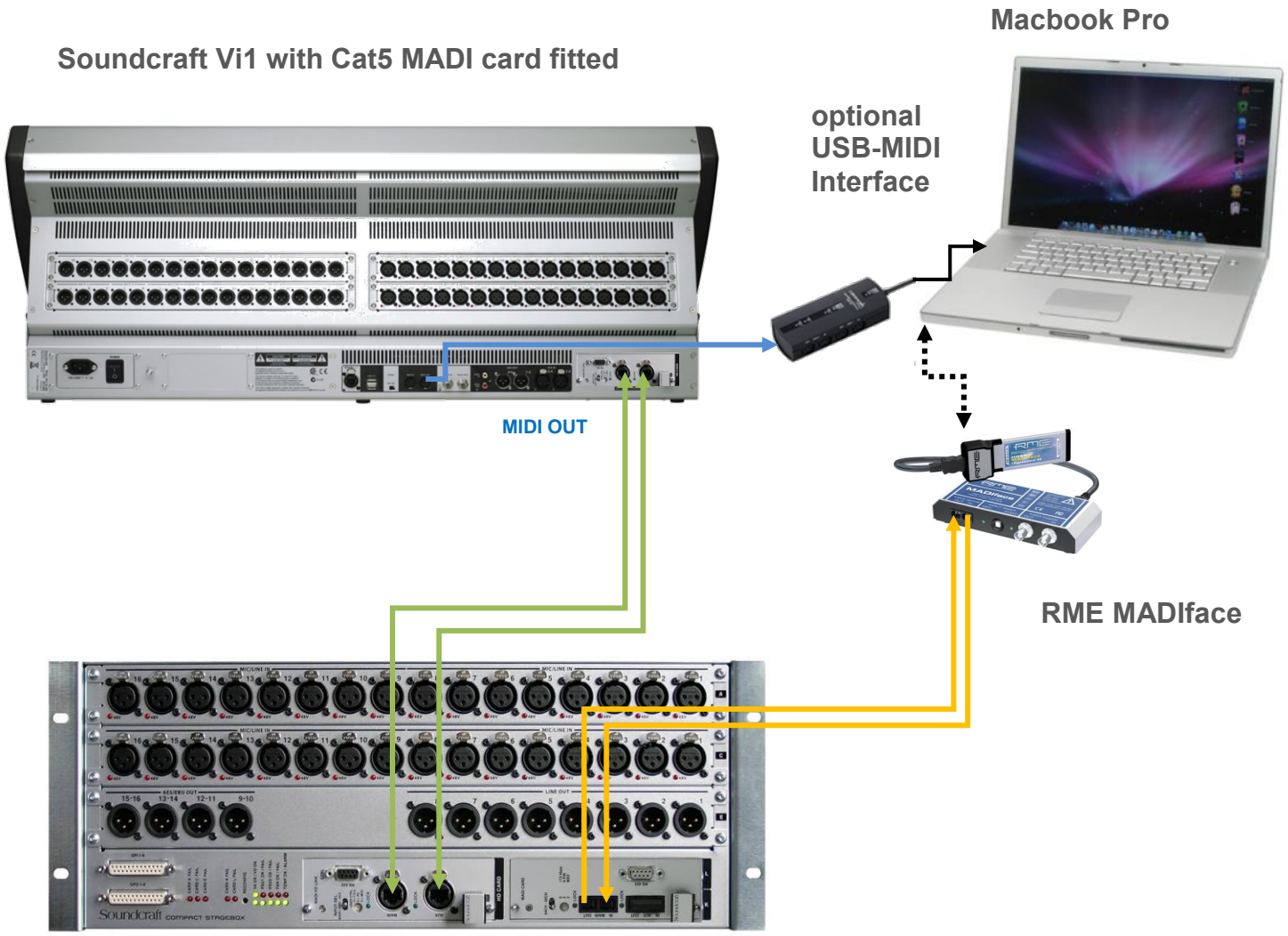


Only change the circled DIP switch – the settings on the right are the original settings of the same switch bank, for reference only.

Connection Diagram – Vi1 (no Stagebox)



Connection Diagram – Vi1 & Compact Stagebox



SETTING UP THE CONSOLE FOR PLUGINS

The console setup is the same for any type of Vi, (although the number of MADI channels available may be limited on the Vi1 if the MADI interface is in the Compact Stagebox).

The procedure is as follows:

1. Prepare insert points (or bus send/channel return patching) on the console, to be used for the Plugins.
2. Set up the Waves Multirack software with required number of virtual rack units, and populate with required Plugins.
3. Set up the audio patching in Waves Multirack to match the channels used on the console.
4. Set up the MIDI interface (if needed) in the Waves Multirack software.
5. Assign the insert points to the required channels/busses on the console, and start using your Plugins!

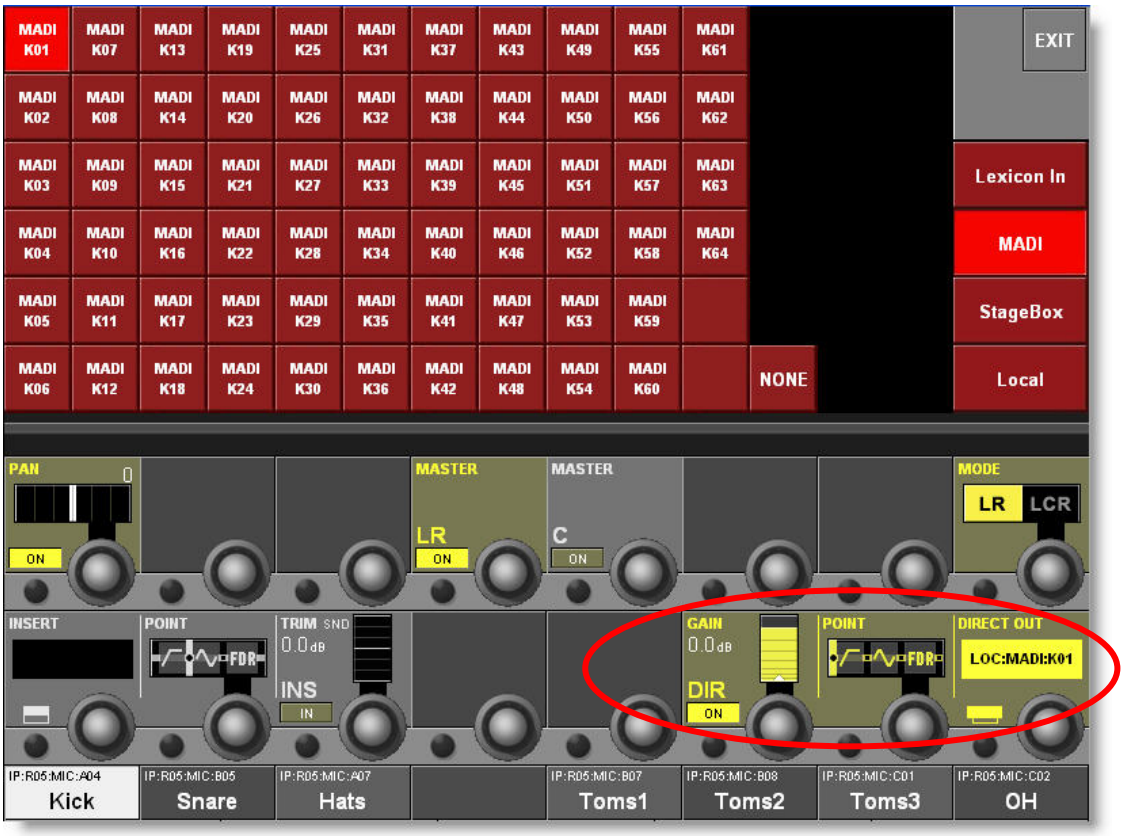
For full details on using the Waves Multirack environment, the Multirack User Manual can be found at:
http://www.waveslive.com/pdf/multirack-native-25-manual.pdf

SETTING UP THE CONSOLE FOR RECORDING / VIRTUAL SOUNDCHECK

Bearing in mind the restrictions on Vi1 consoles with obtaining a free MADI interface when using a Stagebox, the following instructions are similar for all Vi console types. (Screenshots show Vi6).

The procedure is as follows:

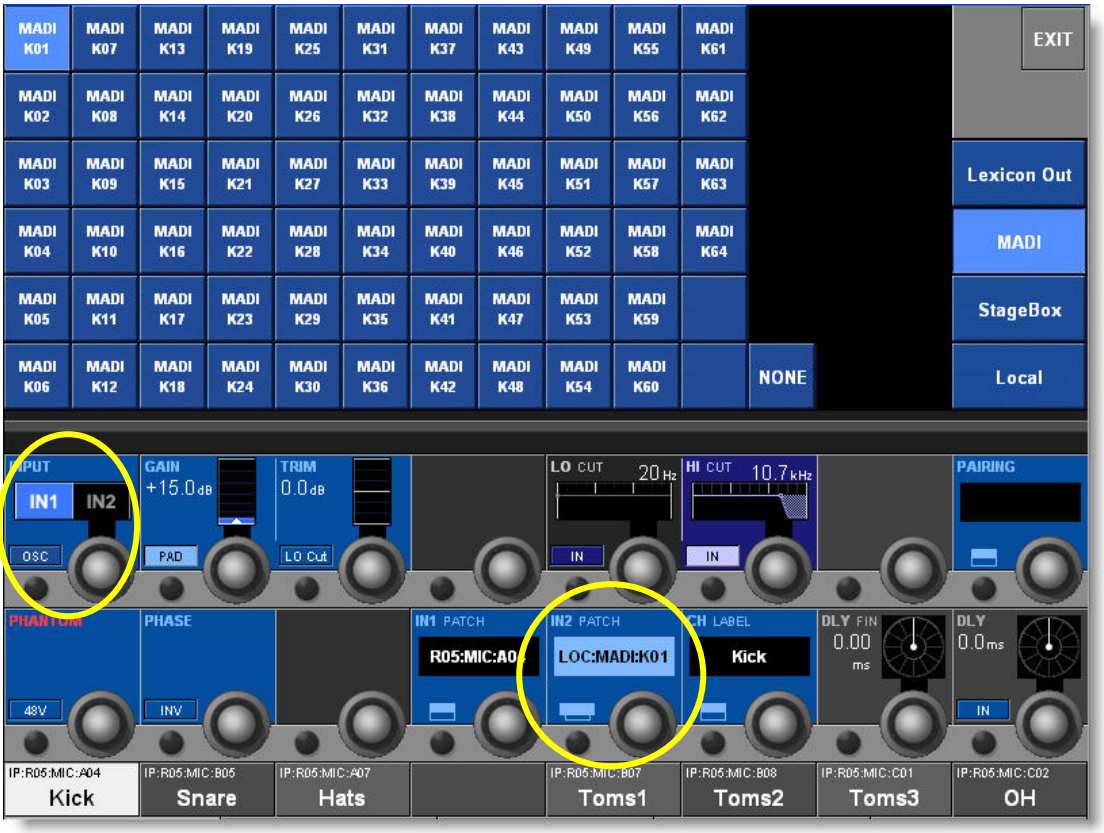
1. Set up the Direct Output patch from each input channel to send to the MADI channels used by the RME MADIface interface.



Set Direct Out level to 0dB, and the POINT setting to the far left (pre-EQ, Dynamics and filters).

Setting the POINT control in this way means the signal sent to the recorder is taken from immediately post- the mic preamp in the Stagebox (or rear of console in the case of Vi1).

2. Set up the Input 2 patch on each input channel to receive from the MADI channels used by the RME MADIface:



The Direct Out and Input 2 patch setup is best done early on in your Show file setup, so that you can save the show to capture these settings, and any snapshots you subsequently create as part of the show will include these settings.

You now have the situation where you have your Stagebox inputs on Input 1, allowing the band to play through the console and these signals to be sent out directly to the recording software via the direct outputs.

Switching the console from Record to Playback mode

In order to play back the recording 'Virtual Soundcheck' mode, you simply have to switch all the input channels over to the Input 2 source.

This can be done in two ways:

1. *Using Gang mode*

Use Gang to gang all channels together, and then press the F-key on any one channel to flip to input 2 (the F-key is mapped to the Input 1/2 selection switch). If necessary you can also switch OFF the Direct Out feed from all channels at the same time – this can sometimes be necessary to avoid a feedback loop if the recording software you are using is not able to automatically mute its input feed during playback.

2. *Using specially prepared Cues*

Using the Scope facility within the Vi's Cue list functionality, it's possible to create two special snapshots which can be recalled at any time with the sole purpose of switching the input source over and if necessary killing the direct output, and can be used regardless of what other settings there are on the console at any time – these will be unaffected.
In other words, these Cues can be used as a type of 'macro' to avoid the manual operation described above using Gang & F-key.

To do this,

1. Set up the console patching as described in the previous section, for both Record and Replay scenarios, and Store a Cue for each case.
2. Open the Cue List page (press Setup button in Snapshot section) and rename the two Cues as Record and Replay as appropriate.
3. Press the 'Show Scope' button to unhide the Scope control section on the left of the Cue List, and set up a selection as shown below, in which only the IN1/2 and DIR items are selected in the input scope, and all the bus outs and VCA masters are deselected in the Channel Scope setup section below.
   Repeat this for both Cues (the Scope settings are Cue-specific).

Setting the Scope in this way means that recalling these two Cues will not affect any console settings except the source selection and direct out settings, so can safely be used at any time to change only these specific settings.

If you are using snapshots to run your show, you will probably need to set the Scope on all of these Cues to **remove** the IN1/2 and DIR from the Scope (ie the inverse of the setup shown below) so that you can use these snapshots in both the record and replay modes.
If you set this up when you create your first Cue, the same Scope setting will be carried over automatically into all the subsequent Cues that you create.



Using MIDI triggering in Virtual Soundcheck

MIDI control can be used on the Vi consoles as part of the Cue List functionality, and as such can be a useful aid to the Virtual Soundcheck process.
Examples of how this can be used are:

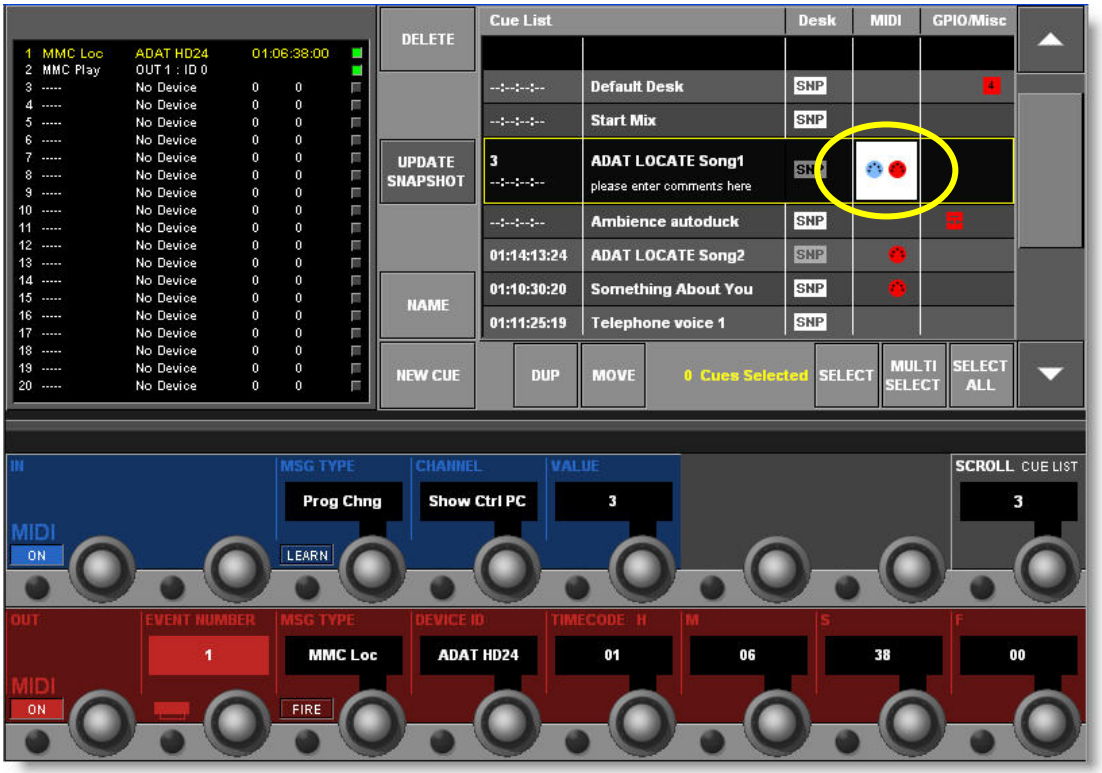
- Switch the console to Replay patch mode automatically using a Program Change message embedded at the start of the soundcheck recording.
  (assumes your DAW software also has MIDI sequencing capability– most can).

- Recall a Cue for a specific song automatically when the DAW is located to the audio for that song (can be done using MIDI timecode or an embedded program change).

- Locate the DAW soundcheck recording to the correct song audio when a Cue corresponding to that song is recalled on the console.

For full details of how to set up MIDI Cue Triggering, see the Vi User Guide, or V3.0 Software Quickstart guide, available from www.soundcraft.com

Below is a screenshot showing how the MIDI functionality is accessed, by touching in the MIDI column area of the selected Cue:
(This shows a locate setup for an ADAT machine, but the principle is the same for a DAW program).



The upper row of controls (blue) allows the MIDI triggering of the selected Cue to be set up, and the lower row (red) allows an outgoing trigger to be set up for locating and starting the DAW playback. Note that multiple (up to 20) outgoing events can be transmitted from a single Cue.