

## V6.2 Software Update

### Mirroring for Vi '00 & '000 Series



Functionality described is contained in software update 6.2.0.274 and later,  
and available on console types Vi200, 400, 600, 2000, 3000, 5000 & 7000.

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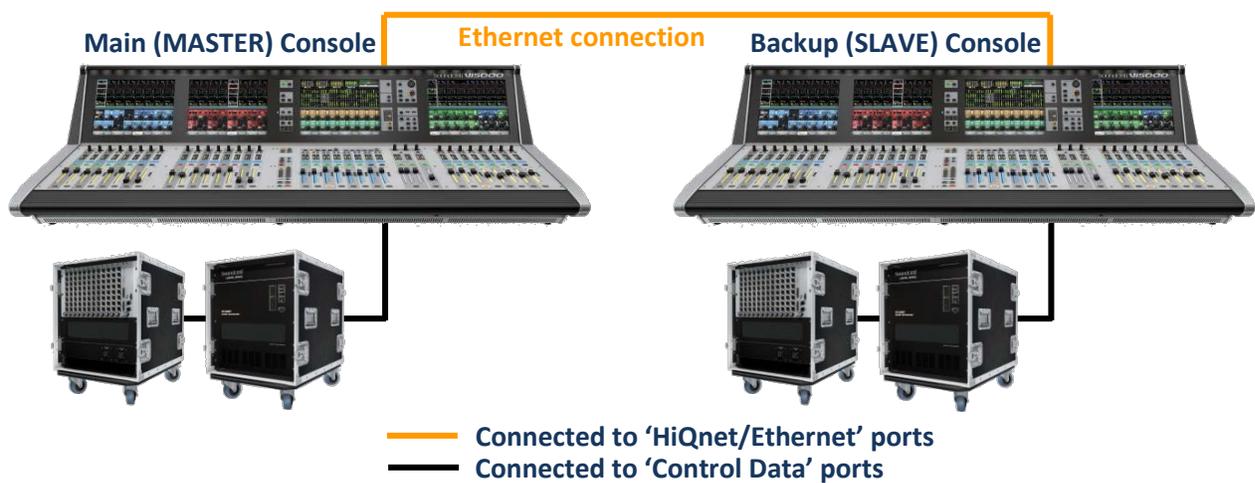
## Applications

V6.2 Software for all Vi '00 and '000-series consoles adds Mirroring to the console functionality for the first time.

Mirroring is an extremely useful feature that allows one console's control surface to remotely control another, using a simple network connection. In practice, this gives several advantages that are usable in various applications:

### Redundant System

If a complete backup console is required, it is possible to set up two identical consoles with their own audio systems, and with an Ethernet connection between the consoles, allow the backup console to keep in sync with the main console as the event proceeds, so that it is always ready to take over, regardless of what changes have been made to the main console since the start.



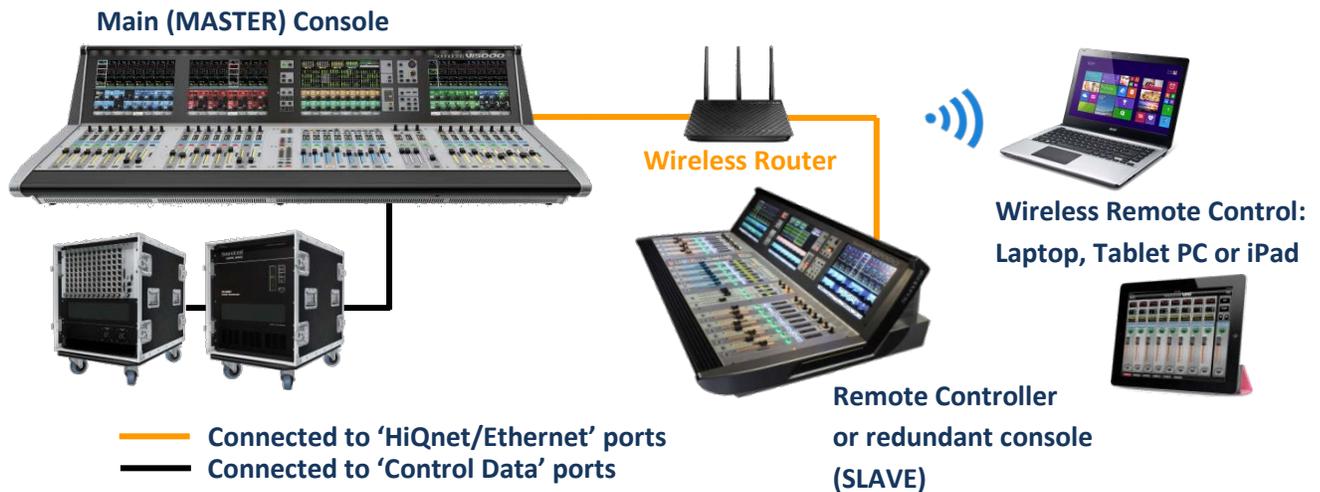
### Remote Control

In some applications it is desirable to have more physical controls available for control of a mixing system, or to have remote control from a physical surface, instead of, or in addition to, a tablet device. This can allow more than one operator to work on the same system, or to visualize and access more channels with reduced requirement for layer switching, or to create a system tech or producer console that is located remotely from the main console.



## Remote Control using Virtual Vi

As an alternative to using a second console for remote control, the Soundcraft Virtual Vi editor application is in fact a virtual console, and can therefore act as an on-line remote control. The ViSi Remote iPad remote control can be used at the same time if required.



## Linking of Parameters

### Which parameters are linked with Mirroring?

All channel and bus audio parameters in the console are linked to the corresponding parameters in the other console(s), if they exist. In practice, this gives rise to the following limitations, when two consoles of different types are linked:

- If one console has less channels or busses than the other, only the channels and busses on the smaller console will be mirrored.
- Patching of I/O will only be linked if the I/O configuration of the two consoles is identical. This will not be the case if for example a Vi3000 is mirrored with a Vi5000. In some circumstances however, e.g. when using Virtual Vi or a surface without local rack as a controller, loading the Show from the main console onto the remote will mean that the I/O config is also loaded onto the remote controller, which will allow patching to be linked.

### Which parameters are NOT linked with Mirroring?

- Controls for gaining access to audio parameters, such as fader layer switching and Vistonics screen paging, are not linked. This means that two operators can work on different parameters on the same main console at the same time.
- Cue List functionality is currently not linked via Mirroring. Recall of Cues on one console however will result in the remote desk being updated with the relevant changes, due to the recalled parameters being sent to the other console, but the Cue lists will not track between consoles, events will not be generated on the remote console and changes to cues have to be updated and managed manually on each console.

## Selectable Parameters in Mirroring

Certain groups of parameters have been allowed to have their Mirroring state user-selectable. This is to allow various applications to be dealt with. These parameter groups are:

- **Monitor & Solo Controls**

If two operators are working on two mirrored consoles, set up as a redundant pair, disabling the mirroring of Monitor and Solo controls allows each operator to use the solo system on their own desk independently, without affecting the other operator.

If one operator is using two Mirrored consoles where one is an extender or 'local' remote control for the other, then enabling the Monitor & Solo Mirroring allows the solo system to act as if the slave console is just an extension of the master.

- **Oscillator**

Oscillator linking can be disabled if it is required to set up and route test signals on both Mirrored consoles separately.

- **User Layer Assign**

The setup of User Layers (both input and output fader pages) may either be linked or not, depending on application. In a redundant console system, this linking would be enabled, in order to make sure both consoles operate in the same way, but in remote control applications where different-sized control surfaces are being used, the linking should be disabled so that each console can have its own fader layer setup.

- **Patching**

Patching will only be linked between Mirrored consoles if the I/O configuration is identical on both systems. In some cases when I/O is identical, it may be beneficial to disable the mirroring of patching, to avoid unwanted changes.

### Master and Slave Mode in a Mirrored setup

When two consoles are first connected in Mirror mode, the current status of all parameters is sent from one console to the other, in order to synchronise both consoles. It is important to be in control of which console sends its parameters to the other, and this is done by designating a 'Master' and 'Slave' status for each console. This must be done before Mirroring is enabled, in order to avoid unexpected changes. The Mirroring GUI contains switching for Master and Slave status. It is often convenient, although not strictly necessary, to load the same Show file on both consoles, prior to enabling Mirroring. Once the Mirroring is in operation, the master and slave designations are not important - it is on first connection that this designation is used.

### Metering Source in Mirrored setup

Depending on the application, the meters on the control surface need to be driven either from the surface's own audio processor, or may read the signal levels in a remote audio core. A control is provided to allow user selection of the meter source.

In a redundant setup, each console will have its own audio core, and therefore the meter source should be set to 'Local' so that metering relates to the audio core being used.

In a remote control setup on the other hand, the remote controller console will either not have an audio core, or it will not be being used, so in this case the meter source should be set to 'Remote', so that the remote surface reads the audio levels from the main console's audio core.

## Setting up Mirroring

1. Connect two consoles with an Ethernet connection between the **HiQnet Ethernet** ports located on the rear panel of the control surfaces. The connection can either be a direct cable connection, or via an Ethernet switch or Wireless router.
2. The first step is to ensure both consoles have a valid Ethernet address. Navigate to the Menu-System-Network page, and ensure the 'Address' tab is selected on the left of the page:



Select either MAN (manual) or DHCP (automatic) mode for setting the address, depending on requirements. Press the SET button after changing modes, or selecting the required address in manual mode, and wait for the address to be displayed in the upper section of the touchscreen.

Note that it is **not necessary** to enable HiQnet using the HiQnet ON button, for Mirroring to operate. HiQnet only needs to be enabled for ViSi Remote control, AKG Mic monitoring, or error message display.

**Note! If there is a console in the system which uses a Local Rack (rather than built-in DSP engine), avoid using addresses in the 192.168.1.xxx subnet, because this subnet is used by the connection between surface and Local Rack, and although this uses a separate Ethernet adaptor in the surface, you will experience performance reductions due to the metering data being sent to both Ethernet interfaces.**

**Some routers with integral DHCP servers are set by default to give out addresses on this subnet, so this will have to be reconfigured using the router's admin page if it is the case.**

## Setting up Mirroring – cont'd

- Once the Ethernet connection and IP address have been set up on both consoles, switch to the Mirroring tab on the left-hand side of the touchscreen:



Before enabling Mirroring, decide which console will be the Master and which the Slave, and set the **MASTER/SLAVE** controls accordingly on each console.

**Warning!** When Mirroring is enabled, the console set as Master will send all of its Mirrored settings to the slave console, overriding whatever settings currently exist on that console.

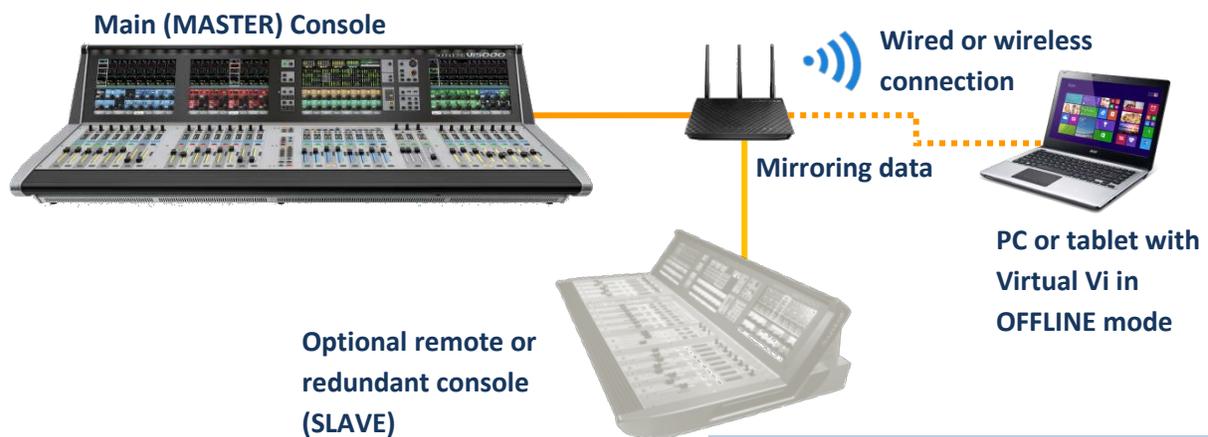
- Also decide which group of parameters is to be disabled from Mirroring, and set this on the Master console only, using the four grouping controls **MONITOR & SOLO**, **OSCILLATOR**, **USER LAYER ASN**, and **PATCHING**.
- Make a copy of the relevant Show file from the Master console on a USB stick, transfer this to the Slave console and load it.
- Once the Master/Slave designation, parameter group selection and Show file transfer has been done, enable Mirroring by pressing the **MIRRORING ON** button on both consoles. After approximately 2 secs, the parameters of the Master console will be transferred to the Slave, and the two consoles will be linked. Adjusting any parameter on one console will cause the same parameter on the other console.
- The **Meter Source** control can be used to choose which audio core will drive the metering on each surface, **Local** or **Remote**. Choose Local for Redundant setups, and Remote for remote control setups.

## Using Virtual Vi as an On-line remote controller

Virtual Vi can behave like an actual console control surface, so can be used in Mirror mode (from V6.2 onwards) as either a remote controller for any type of Vix00/x000 console, or if connected to a Local Rack in place of a control surface, can act as a space-saving redundant control surface.

### Remote Control using Virtual Vi

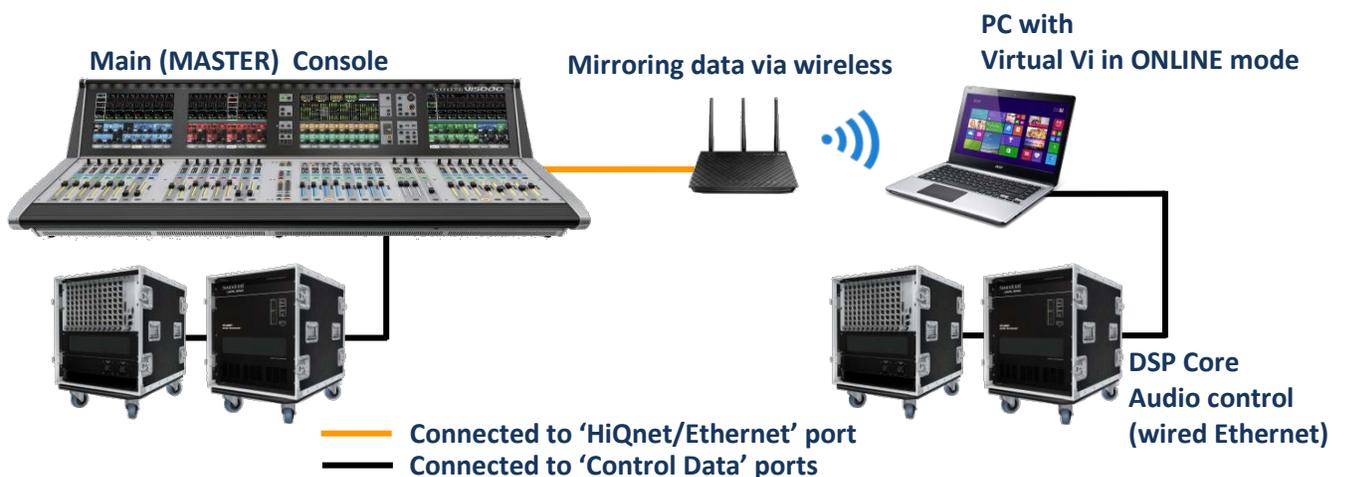
In this application, a wired or wireless connection to a tablet running Virtual Vi is used to provide remote control of a main console. This can be in addition to remote control from a second console, or with a second console connected in parallel as a redundant system.



**Note! Configurations of TWO consoles plus a Virtual Vi will require a managed Ethernet switch with a wireless access point with IGMP Snooping enabled in the switch. See Troubleshooting section, p11.**

### Redundant Surface substitute using Virtual Vi

In this application, a Virtual Vi running on a laptop or tablet is connected with a wired Ethernet connection to the DSP Core in the Local Rack of a redundant system, and a wireless link is used to allow the Virtual Vi to synchronise with the main console, after loading the main console's show on the editor.

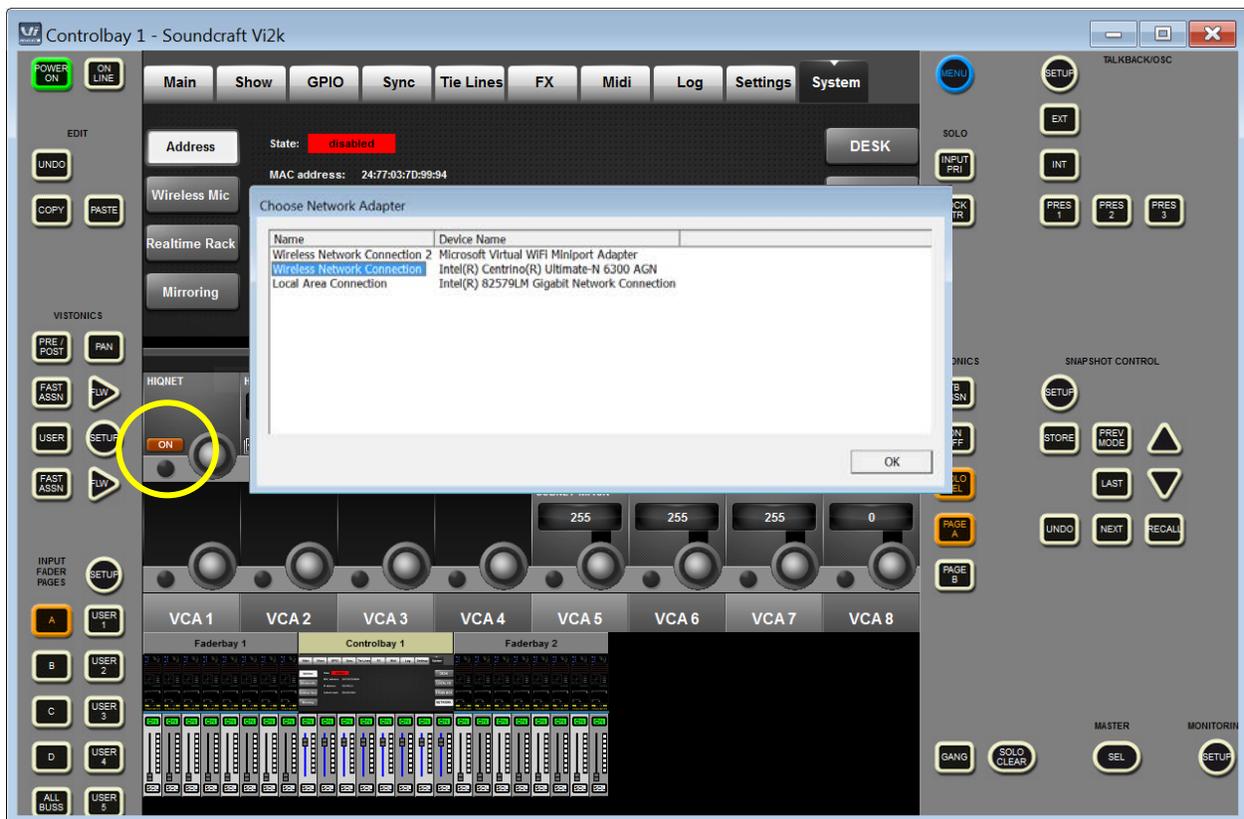


## Connecting Virtual Vi to wireless and wired networks

### Mirroring and HiQnet applications

For mirroring applications, it is NOT necessary to enable the ONLINE button (top left, next to Power button), as this is only used when connecting directly to a Local Rack for direct audio control (see next item). For connection to another console for mirroring, it is first necessary to set up the IP address in the Menu-System-Address page. Unlike in a console, the Virtual Vi needs to be told which network adaptor you wish to use for each function that requires a network connection. To trigger this, press the HIQNET ON button in the Address page, which will open a dialogue box allowing you to choose which network adaptor should be used.

*(Note, this step is necessary even if HiQnet itself is not being used, as the IP address setup is linked to HiQnet functionality).*



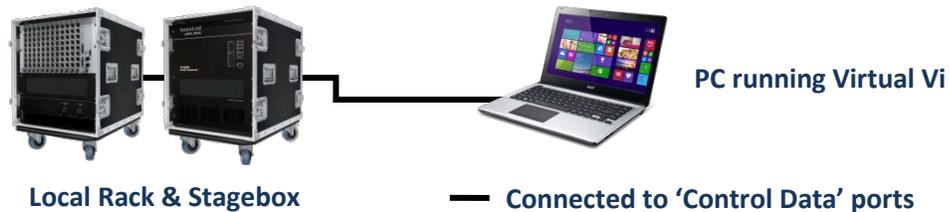
Choose either the LAN adaptor (for wired connection) or the Wireless adaptor, depending on how you are connecting the PC running Virtual Vi to the console. Then proceed to set up Mirroring as described in the preceding sections.

*Note: The network adaptor dialogue will appear whenever you first enable a function using network functionality, this includes Mirroring, UA (Realtime Rack connection) and Shure Wireless Monitoring. In each case, choose the relevant adaptor.*

## Direct Control of a Local Rack's DSP Core (Vi5000/7000 and Vi400/600 only)

This must be done using a wired Ethernet connection.

(Note: to control the internal SpiderCore of a Vi2000/3000 using Virtual Vi, use Mirroring as described on p8).



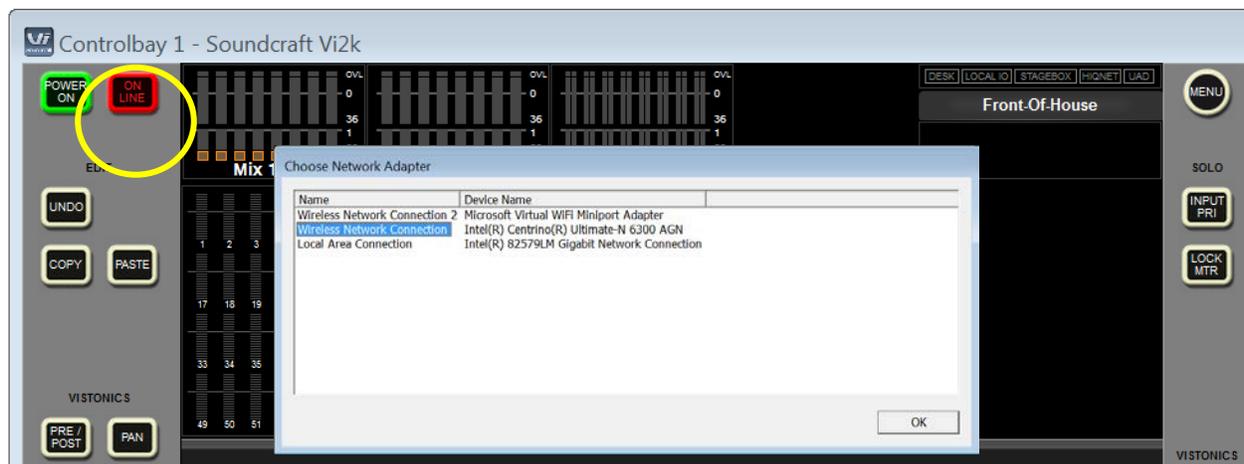
Connect an Ethernet cable from the Control Data port on the Local Rack to the PC's wired LAN port.

Press the ONLINE button at top left of Virtual Vi GUI.

The network adaptor dialogue box appears – choose the LAN adaptor and click OK.

The ONLINE button now lights in red and communication to the Local Rack starts.

*The connection status can be monitored if desired by observing the green LED in the Ethernet socket of the Bridge card within the Local Rack.*



Note that no IP address setup is necessary when using the ONLINE button to connect to the Local Rack, because an appropriate IP address is automatically assigned to the network adaptor when the ONLINE mode is enabled. This is a temporary IP address and is removed when Virtual Vi is shut down. You do not need to change the IP configuration settings of the LAN port on the PC.

If Mirroring is being used at the same time as Online control of a Local Rack, using either a second LAN interface or the wireless LAN interface, it should be noted that IP addresses in the range 192.168.1.xxx must not be used for this second connection, otherwise performance reduction will occur on the Online control link. For this reason it is also not possible to use a router or switch to connect both the Local Rack's Control data port and another console's Ethernet connection for Mirroring, onto a single LAN interface on a PC.

## Troubleshooting

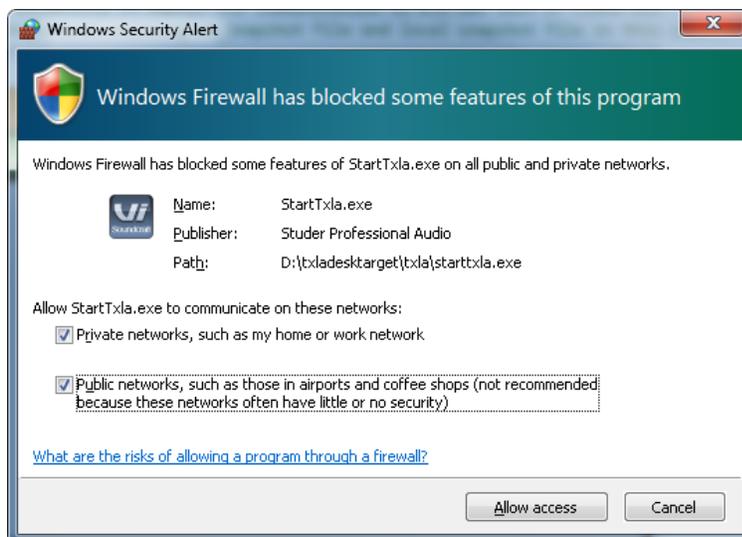
### Solving sluggish operation when using ViSi Remote and Mirrored consoles

*This issue is likely to occur if more than 2 consoles are Mirrored, e.g. two consoles plus a Virtual Vi remote control.*

1. In order to optimize network bandwidth, especially when using ViSiRemote and Mirroring in parallel, enable “**IGMP Snooping Status**” on your WLAN router by accessing its ADMIN setup pages. This will filter out the UDP data used by mirroring from HiQNet data transmitted over the wireless LAN. (IGMP Snooping filters multicast messages sent by mirroring from any ports not using multicast).  
*Note that most standard routers and switches do not have IGMP Snooping capability – in this case, use a Managed Ethernet switch together with a separate wireless access point if wireless is required.*
2. If any of the mirrored consoles is a Vi400/600/5000/7000, check the IP address used by the console in the Menu-System-Network-Address page, and ensure this is not in the 192.168.1.xxx range, as this is used for the connection to the Local Rack and will result in Ethernet performance reduction. Vi2000 and 3000 are not affected by this restriction as they use an internal DSP Core.

### Windows Firewall with Virtual Vi

After installing Virtual Vi and running it the first time, it is likely that Windows Firewall will cause the following dialogue box to pop up, when one of the remote control features is used:



If this happens, ensure that the two check-boxes are ticked and then click the ‘Allow Access’ button. This will enable Virtual Vi to communicate using UDP and TCP protocols on the network ports.

The dialog should only appear once, the first time the program is used and one of the network features is accessed.