

# **VI24**

## **Video Switcher Interface**

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### **OPERATING INSTRUCTIONS and trouble-shooting guide**

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**LECTROSONICS, INC.**

Rio Rancho, NM

## INTRODUCTION

The VI24 Video Switcher Interface offers flexible automated control of video switchers based on the output status of up to eight Lectrosonics AM8 or AM16 mixers. While its 24 independent logic outputs could be used to control almost anything, the VI24 is intended primarily for use as a low-cost video-follows-audio system. Some possible applications are:

- courtrooms
- board rooms
- panel discussions
- legislative sessions
- security systems

Using the accompanying software, you need only describe your mixer setup and then assign mixer input activity to trigger the VI24's logic outputs. Your settings are then sent to the VI24 and the unit is thus "programmed" for your specific needs.

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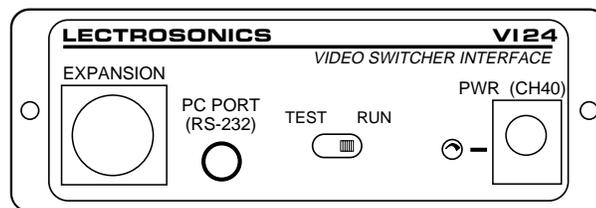
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## FCC PART 15 NOTICE

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## FRONT PANEL CONTROLS AND FUNCTIONS



### EXPANSION JACK

The LecNet expansion jack is for connection to the mixers being monitored. It is not necessary to connect anything to this jack while programming the VI24, though if a connection is available, the VI24 software can detect and display information about any connected mixers.

### PC PORT

The PC Port is used for programming and controlling the VI24 using the accompanying VI24 software. Simply connect it to a serial port (e.g. COM1 or COM2) of the computer.

*Note:* It is possible to use the VI24 software to create and store a configuration, then program the VI24 at a later time. Thus, a setup can be conceived and created on a laptop computer en route to an event.

### TEST/RUN SWITCH

The VI24 operates normally (and the led glows steadily) when the Test/Run switch is in the “run” position. In the “test” position, the led flashes and each of the 24 logic outputs is asserted in turn for one second. After 24 seconds, the cycle repeats, starting with the first logic output again. The test function is intended to assist the user in narrowing down problems. If the video switcher faithfully executes the functions associated with each of the output pins in test mode, neither it nor the associated wiring is at fault. To exit test mode, simply return the switch to the “run” position.

*Note:* The led can flash in run mode. See the section on the led for details.

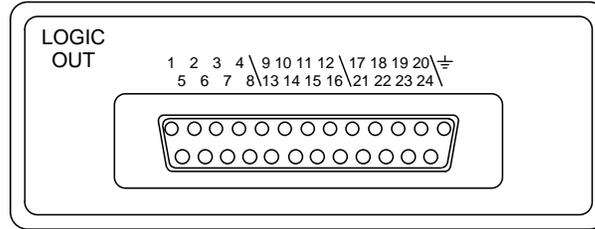
### LED

The led serves as a power and status indicator. In test mode, the led flashes once a second. During normal operation, the led glows steadily. The led flickers slightly during programming transfers, to indicate activity. When the unit is first powered on, the led may flash about five times while the memory is being initialized. This will not happen if the memory was initialized during factory testing procedures.

### POWER JACK

The VI24 requires a Lectrosonics CH-40 charger (included with the VI24) for power. While the VI24 has no power switch, it uses very little power. It may safely be connected to a switched outlet such as a power strip in a rack.

## REAR PANEL CONTROLS AND FUNCTIONS



### LOGIC OUTPUTS

On the rear of the VI24 is a male 25-pin D connector as is commonly used for computer interfaces. This is not a serial, parallel or SCSI port, however. As the markings next to the connector show, one of the pins is ground, and the others are the logic outputs, numbered 1 to 24. These are “open-drain” outputs: When the pin is “off”, there is no connection to ground or to any other pin (it’s an open circuit). When the pin in “on”, it is shorted to ground. Thus, a switch contact closure is electrically simulated.

Note: the popular “GPI” (General Purpose Interface) common to many popular video switchers requires exactly these electrical characteristics. The output pins of the VI24 may be connected directly to GPI input pins.

## INSTALLING THE SOFTWARE

The VI24 software requires Microsoft Windows 3.1, Windows For Workgroups, Windows 95 or Windows NT. You will need approximately 4MB of available hard disk space to install the application. You will also need an available serial port to connect to the VI24.

Insert the floppy and run SETUP.EXE. On Windows 3.1 and Windows For Workgroups, select “Run...” from the Program Manager. On Windows 95 and NT, click the start menu, then select “Run...”. Type in **x:\setup**, where **x** is the letter associated with your floppy disk drive (usually **a**).

## INSTALLING THE HARDWARE

What you connect to the VI24 will depend on whether you are programming it away from its intended application or programming it where it will actually be used.

### REQUIRED CONNECTIONS

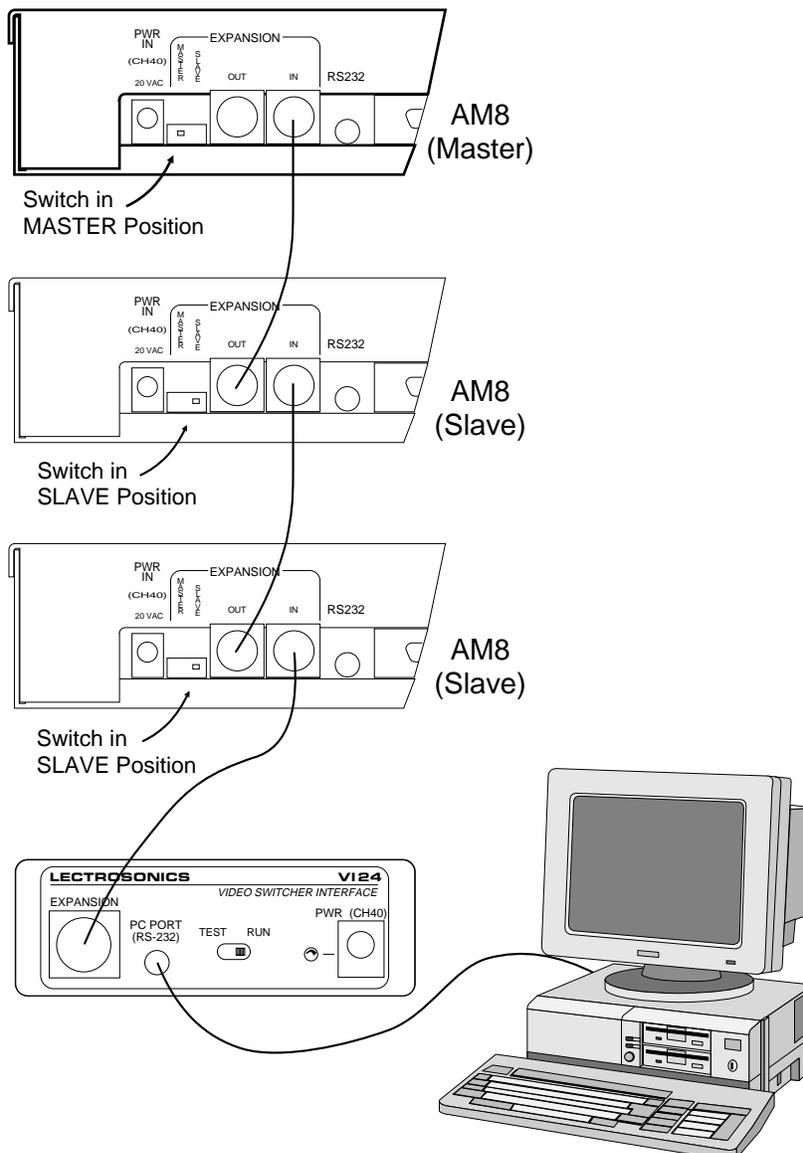
To set up the VI24, the unit must be powered on with the PC port connector attached to an available COM port on the PC. (See the SERIAL PORT HARDWARE AND SOFTWARE section for details on wiring your own serial cable.) The PC must have the VI24 software installed.

To use the VI24, it must be powered on with the LecNet expansion connector attached to an AM8 or AM16 Mixer, and the Logic Outputs connected to the video switcher or other device(s) being controlled.

### OPTIONAL CONNECTIONS

When setting up the VI24, it can be helpful to have the LecNet expansion port connected. That way, the VI24 software can detect the LecNet addresses and types of the mixers for you, and you can fine-tune your setup by actually speaking into the microphones and watching the display.

When using the VI24, it may be desirable to have a PC connected so you can monitor the VI24's activity.



## SETTING UP THE VI24

Preparing the VI24 for use mostly involves using the VI24 software to describe your setup. It is then a simple matter to transmit these settings to the VI24. If your PC is at the site where the VI24 is to be used, you can also use the VI24 software to monitor and refine your settings.

### MAIN WINDOW

The main window provides an at-a-glance overview of the current VI24 programming and status.

In the upper-left corner is the VI24 status indicator. There are three values.

#### Live

The output pin status display is updated in real time as the VI24 operates.

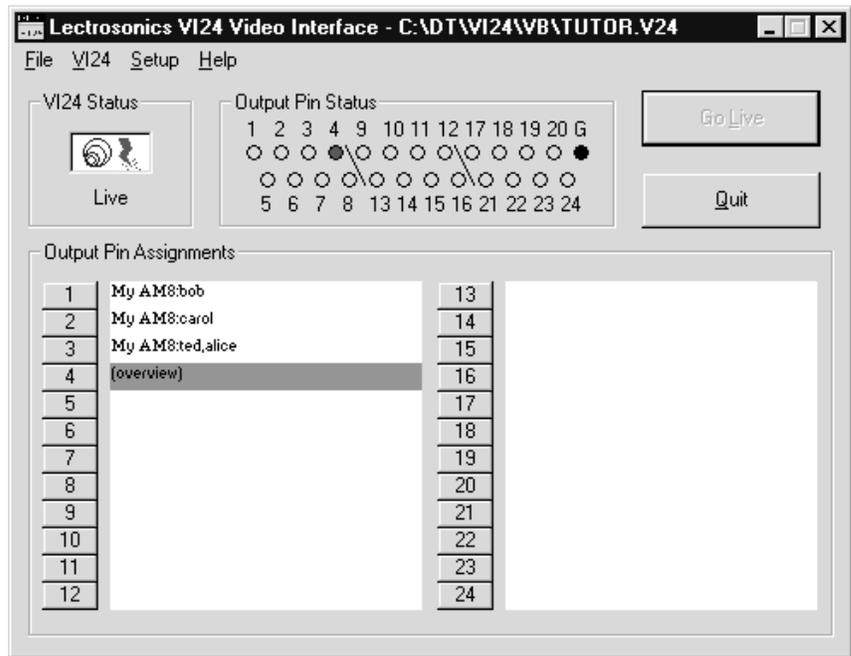
#### Ready

The VI24 is attached and the serial port is open and ready for communication, but the status does not update in real time.

#### Not Connected

The PC serial port is closed and no communication with a VI24 is presently possible.

Note: If the active window in the Windows system belongs to an application besides the VI24 software, the VI24 software will disconnect from the serial port until it again has focus. This is intended to prevent serial port conflicts.



The Output Pin Status display shows which of the output pins are on at any given time. This display is only valid when receiving “Live” updates from the VI24.

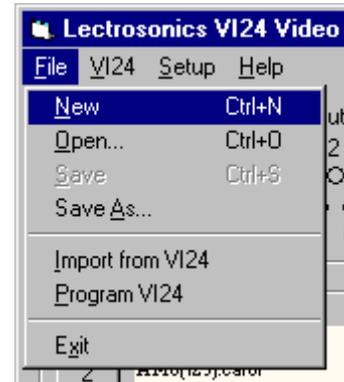
At the bottom are shown the “Output Pin Assignments”. Along with each output pin is a text box describing the signals or events that cause that output to turn on. The numbered buttons may be used to change these assignments.

The “Go Live” button tells the VI24 software you would like to dynamically monitor the status of the VI24. The VI24 software will first make sure that the settings as expressed on the PC are the same as those in the VI24. Depending on whether you have made edits, you may be prompted to “import” the current settings from the VI24, or to “program” the VI24 with the new settings you’ve created on the PC.

The “Quit” button exits the VI24 software. If any changes have not been saved, you will have the chance to save them.

Most of the items on the File menu are straightforward. “New” clears the workspace to start fresh. “Open” recalls saved settings from disk. “Save” saves the current settings under the same name that was used to recall them. “Save As” allows the current settings to be saved to any disk file. “Exit” works the same as the Quit button.

“Import from VI24” reads the current settings from the connected VI24 into the workspace. Importing from the VI24 restores all settings, just as though they had been restored from a disk file. “Program VI24” sends the current settings to the connected VI24.



The VI24 menu controls the current VI24 connection status. From here you may voluntarily connect or disconnect the PC's serial port from the VI24, as well as toggle the "Live" display of VI24 output pin status. An option is also provided to clear all VI24 memory and return the unit to its original factory settings.

The Setup menu calls up the three main windows used for creating and changing VI24 settings. These windows are discussed below.

## OPTIONS WINDOW

The VI24 Options window provides a few options to fine-tune the VI24's behavior to meet your specific needs.

**Max. Simul. outputs**, adjustable from 1 to 24, indicates how many outputs the VI24 may activate at any given time. Most video switchers can activate only one video source at a time, though some may be able to split the screen if two inputs are active.

The **Conflict Resolution** option buttons tell the VI24 what to do when the number of active outputs exceeds the maximum simultaneous outputs setting. This happens if your video switcher can accommodate only one video source at a time, yet two or more people assigned to different cameras speak simultaneously. Three options are provided.

**Previous pins:** Active outputs remain active. The VI24 will not respond to interruptions until the original speaker stops talking. The Pin 1 Priority option allows pin 1 activity to override a previously active pin, even though all pins remain immune to interruptions from other than pin 1. In this way, a discussion leader can activate the camera, but other speakers interrupting each other will not cause camera switches.

**Lowest numbered pins:** Lower numbered pins take priority. Discussion leaders can activate the camera even if others are still speaking.

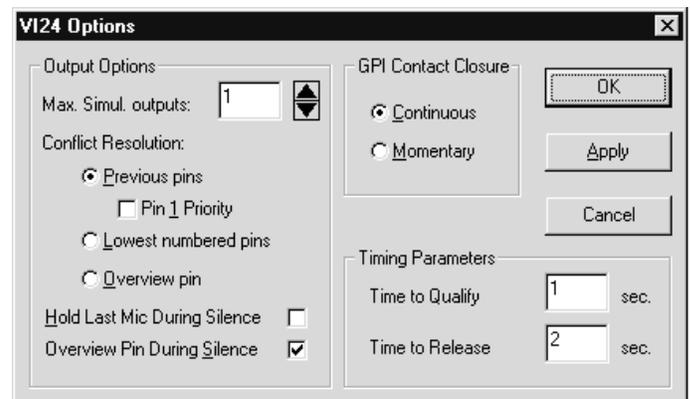
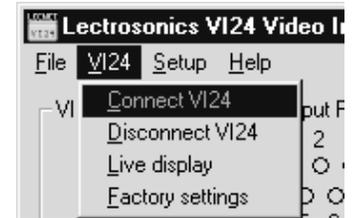
**Overview pin:** The overview pin takes over. This avoids viewer fatigue by showing the entire room when many people speak at once. The overview pin will also activate during silence unless the Overview Pin During Silence box is unchecked.

The **Hold Last Mic During Silence** feature is useful when no overview camera is available. In this mode, the most recently active output pin remains active indefinitely until another output pin becomes active. The most recent speaker remains on camera until someone else speaks. Note that if both Hold Last Mic During Silence and Overview Pin During Silence are checked, two pins will be activated during silence, even if Max. simul. outputs is set to 1.

The **Overview Pin During Silence** checkbox causes the overview pin to be activated during periods of silence. Ordinarily this box is checked. Unchecking this box permits the overview pin to be used exclusively for conflict resolution, if desired. (See Conflict Resolution, above.)

The **GPI Contact Closure** frame lets you indicate what type of GPI inputs your video switcher has. Some require momentary closure while others require continuous contact.

**Time to Qualify** is the length of time a mixer input must be active before the VI24 will assert the corresponding output pin. **Time to Release** is the length of time a mixer input must be inactive before the VI24 will extinguish the corresponding output pin. For both settings, 0 means no delay. Fractional seconds are permitted, but precision beyond .5 seconds is not assured.

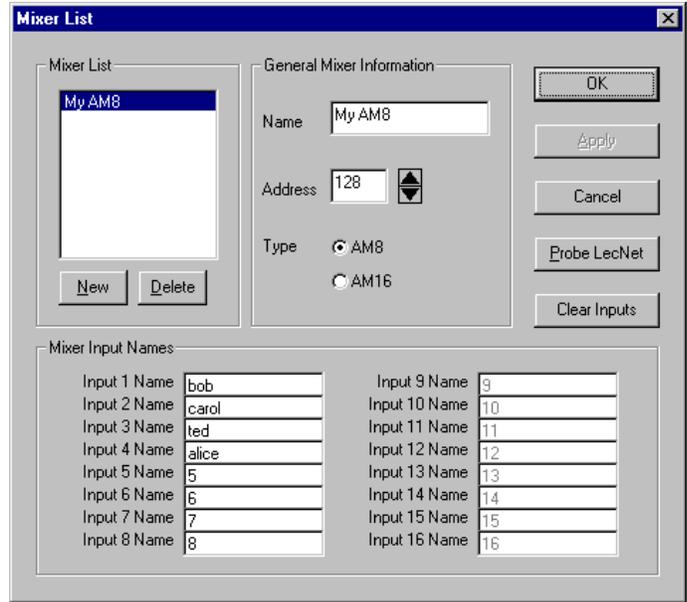


### MIXER LIST WINDOW

The Mixer List provides information about your LecNet setup. Here, you may list up to eight AM8 or AM16 mixers to be monitored by the VI24. Each mixer and each mixer input may be named, for convenience and ease of use. It is recommended that you name the mixers so you may easily identify them, and that you name the mixer inputs after the person or item associated with the microphone.

If your LecNet setup is connected, you may use the “Probe LecNet” button to detect up to eight mixers. You will probably still want to assign your own names to the mixers and inputs, though the default names may also be used.

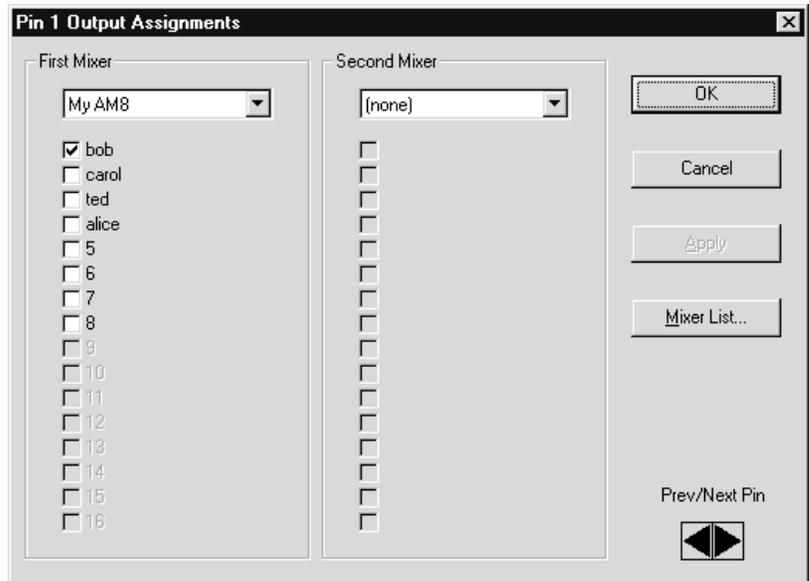
The “Clear Inputs” button is a simple expedient to erase all mixer input names.



### PIN ASSIGNMENTS WINDOW

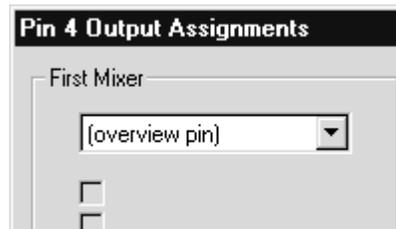
The Pin Assignments Window lets you assign mixer inputs, alone or in groups, to the VI24’s 24 logic outputs. Only one logic output’s information is shown at any one time, but the scrolling arrows in the bottom right corner may be used, as well as the numbered buttons or Pin Assignments submenu in the main window, to move among the pins.

Each pin may be associated with any of the inputs of up to two mixers, as shown. If more elaborate configurations are needed (i.e. more than two mixers on a single pin), multiple output pins may be shorted together. The output is then asserted if either pin’s conditions are met.



### The Overview Pin

Any one pin may also be designated as the “overview pin”. The intended purpose of the overview pin is to reduce viewer fatigue by activating an overview camera (showing the entire room) in situations where no other camera selection would be appropriate. The overview pin is not associated with any mixer inputs and is asserted either during periods of inactivity or during periods of excessive activity (conflicts). The Pin Assignments window is used to choose an overview pin, but the Options window determines under what circumstances the overview pin is active.



## SETTING UP THE VI24 FOR THE FIRST TIME

While the VI24 software is not difficult to use, the large number of features and options might cause it to appear intimidating at first. With that in mind, let us configure the VI24 for a simple, yet typical application, step by step.

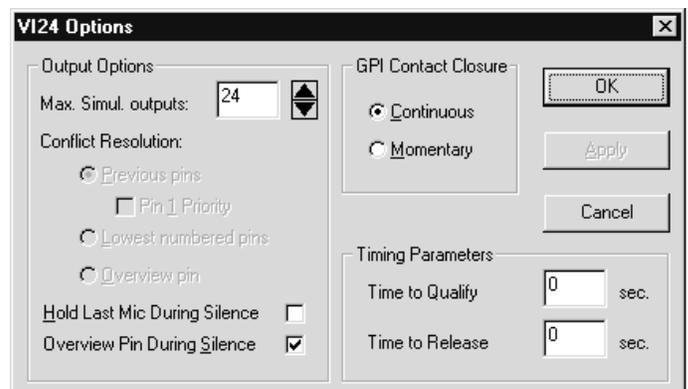
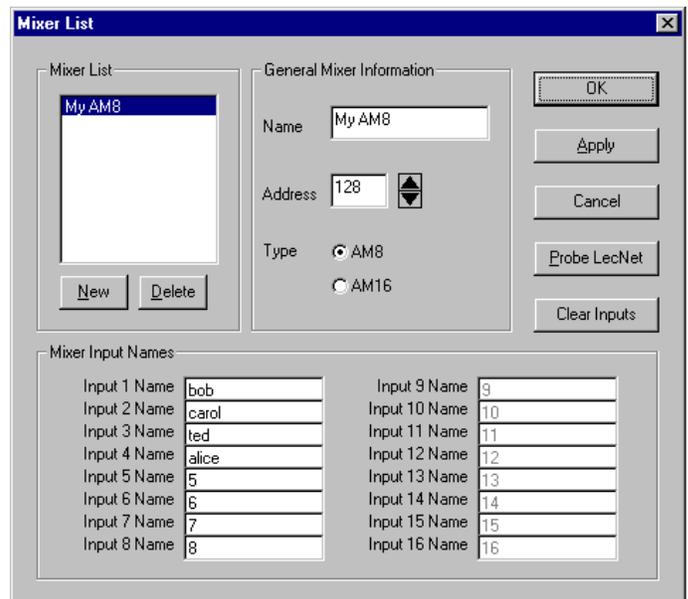
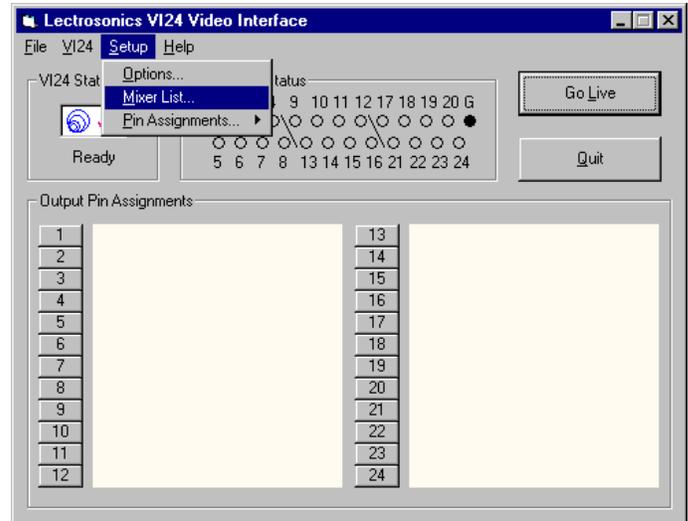
### PREPARATION

In order to follow this example, you will need the VI24 software installed and running on your PC. It is strongly recommended, but not absolutely required, that you have your VI24 powered on and connected to the PC. If you have an AM8 or AM16 mixer available, connecting that will make more options available and also make for some enjoyable experimenting once the VI24 is configured.

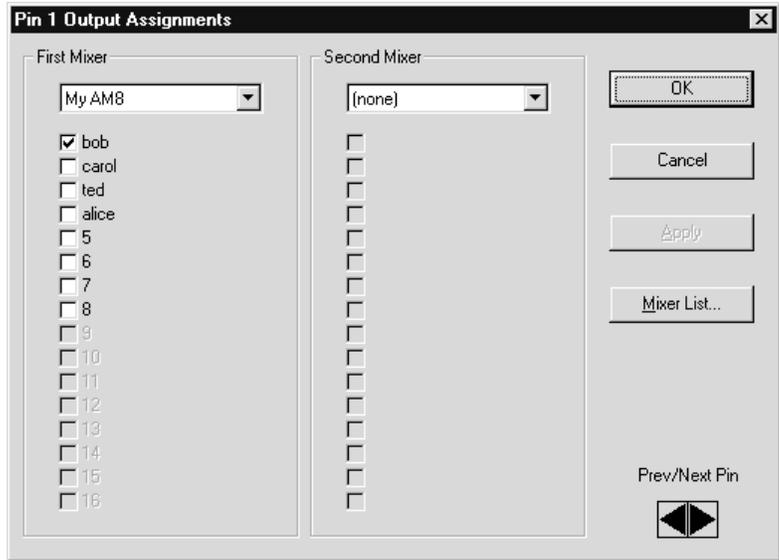
1. [Follow this step only if you plan to work with the VI24 connected.] Be sure the VI24 is connected, powered on, and the Test/Run switch is set to "Run". The led should glow steadily. (If the led flashes for a few seconds and then glows steadily, this is normal. The unit has never been powered on before and it is clearing its memory.)
2. Start the VI24 software. If the VI24 is not connected, you will need to confirm a message that says the VI24 was not found, but you can work offline. If the VI24 is connected, its current settings will be imported. In either case, you should arrive at the main window. If your VI24 is connected, but the software does not see it, please consult the TROUBLESHOOTING section.

Note that the VI24 Status indicator will show not connected if you are working offline.

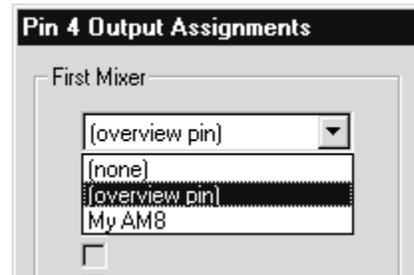
3. Select "Mixer List..." from the Setup menu.
4. If you're working with the VI24 connected, you can now click the "Probe LecNet" button to detect your mixer(s) and populate the mixer list dialog automatically. You may wish to use more descriptive names than the probe supplies (just change them). If you're working offline, simply enter the information as shown. Click OK when done.
5. From the VI24 menu, select "Options..." to bring up the Options window. Duplicate the settings shown. This will cause the VI24 to respond immediately to changes in mixer inputs, thus eliminating the confusion that a delayed response can cause at first. We are also specifying that the "overview pin" (and not the last active mic) shall be active during silence. Finally, we're placing no restrictions on the number of outputs that can be active at once. Click OK when done.



6. On the main window, click numbered button "1" to change the pin assignments for logic output pin number 1. Make the settings as shown.
  7. Use the "Prev/Next Pin" spin control in the bottom right-hand corner of the window to advance to Pin 2's assignments, select the mixer in the drop-down list the same way, but check only "carol".
  8. Use the "Prev/Next Pin" spin control to advance to Pin 3's assignments, assign the same mixer, but this time check both "ted" and "alice". (We're pretending that those two speakers have their own microphones but share a camera, a common situation.)
  9. Use the "Prev/Next Pin" spin control to advance to Pin 4's assignments, and assign pin 4 as the "overview pin" by selecting "overview pin" in the drop-down list.
- Click OK when done.



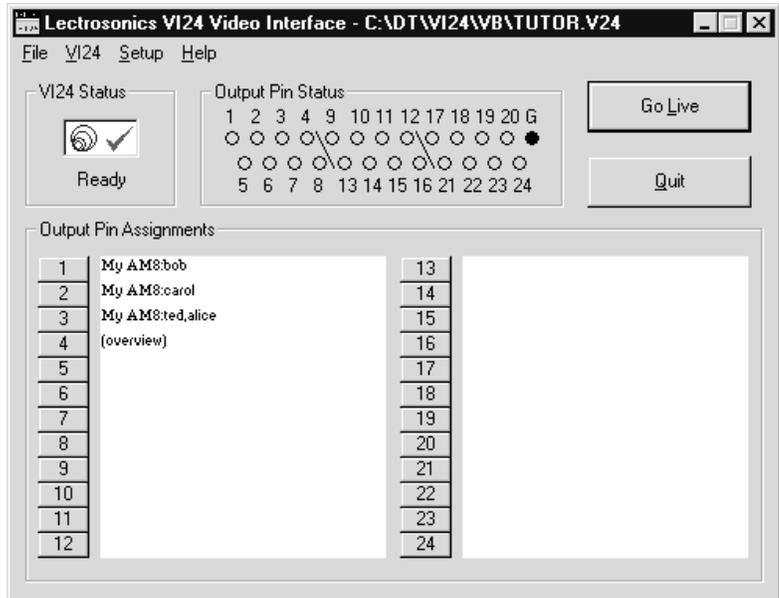
10. The main screen, which shows an overview of the current settings, should now look like this.



This display is telling us that the VI24 is connected (if you are working offline, you'll see the "not connected" status instead), and that four output pins have been assigned a function. The first pin is assigned to Bob's microphone alone, the second to Carol's, the third is shared between Ted and Alice, and the fourth is the "overview pin", becoming active when no assigned input is active.

If anything looks incorrect, you can harmlessly repeat any previous step.

11. Save your work. From the File menu, click "Save As..." and choose a name for your file. You will now be able to recall these settings at any time.
12. If you have been working offline, you're now finished until you can get your settings into the VI24. Use the Quit button or the "Exit" from the File menu to quit the VI24 software. Once the VI24 is available, you can restore your settings by running the VI24 software and using "Open" from the File menu to read the file you previously saved.



13. Click "Go Live". You will be asked if you wish to update the VI24 with your new settings. Select "Yes". A progress indicator is displayed while the information is being transferred to the VI24. If you can see the VI24's led, you will notice that it flickers during programming. This is normal and is intended to indicate that the unit is talking to the PC. The VI24 Status will now show that you are "Live".

14. If you have a mixer connected, you should now tap on the microphones, or manipulate the Direct/Auto switches, to observe the behavior of the VI24. You should notice that input 1 lights up output 1, input 2 lights up output 2, and either of inputs 3 or 4 lights up output 3. Output 4 is active whenever inputs 1 thru 4 are dead. It's just as you programmed it!
15. Congratulations! You have successfully set up your VI24. Setting it up for a more sophisticated scenario is really not very different, so you can now consider yourself an experienced VI24 user.

## TROUBLESHOOTING

The following are just general guidelines and initial suggestions. If a problem persists, please refer to the section, SERVICE AND REPAIR.

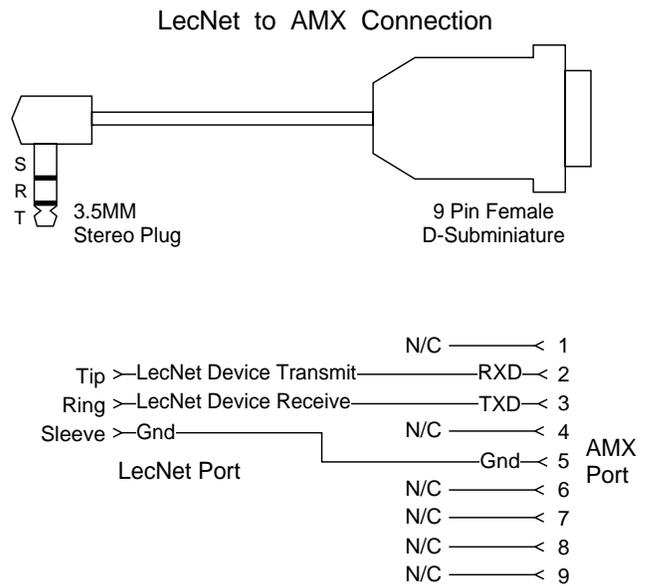
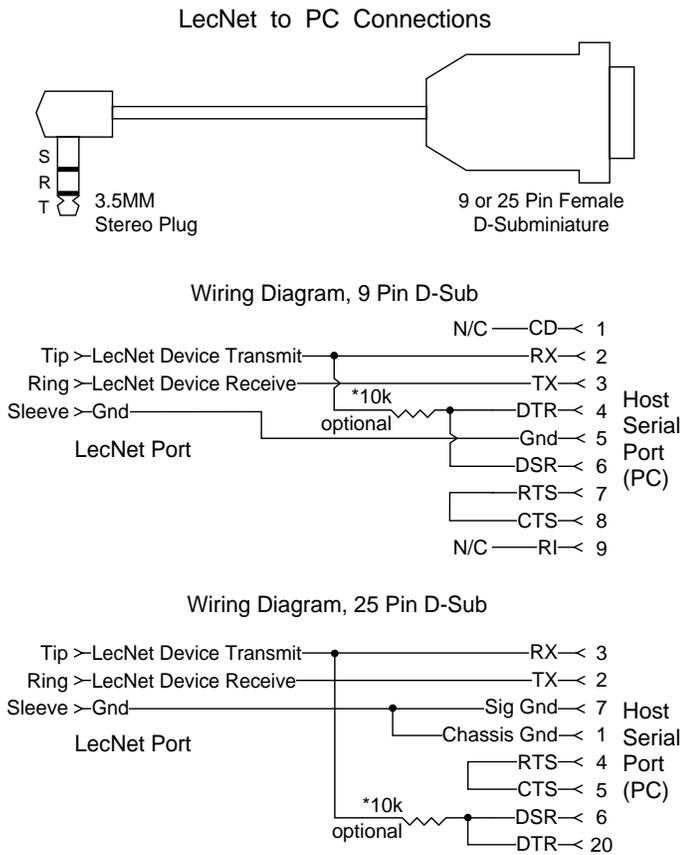
| PROBLEM  | POSSIBLE SOLUTION   |
|--|---|
| <b>No activity from led when power is applied.</b>                 | Ensure that the power supply is working. Ensure that power is getting to the CH-40 (e.g. check for switched or defective outlets). If another CH-40 power supply is available, try it.  |
| <b>VI24 software can't find the VI24.</b>                          | Be sure the VI24 is powered on, the test/run switch is set to "run", and the PC Port jack is connected to an available COM port on the PC. Some devices such as internal modems take over the use of a COM port while the connector on the back of the PC still appears available. If a gender changer, adapter or cable extension was used, ensure that all pins are connected normally and not in a "null modem" configuration.   |
| <b>Non-VI24 LecNet software can't see attached LecNet devices.</b> | In order to do its job, the VI24 has to keep the PC Port disconnected from the LecNet during normal operation. Special commands can be sent to the VI24 to get it to stop monitoring mixers and link the LecNet to the PC, as well as to break the link and resume normal operation. Both LecNet Master Pro and the VI24 software are aware of this behavior. However, if you use software associated with other LecNet devices directly, without going through LecNet Master Pro, problems can arise. To check for this, start the VI24 software (the VI24 should appear "connected") and minimize the window. This will cause the VI24 to link the PC port to the LecNet, and then close the serial port so your other LecNet software can operate. |
| <b>VI24 or VI24 software cannot see all mixers.</b>                | Check the order in which the expansion ports are connected, as well as the settings of the master/slave switches on all the mixers. See the diagram in the INSTALLING THE HARDWARE section for details on the proper configuration. Also use the LecNet software to ensure that each connected LecNet device has a unique address.  |

## ACCESSORIES

| Part Number | Description                                     |
|-------------|---|
| CH40        | Power supply                                    |
| 21551       | LecNet expansion cable for connection to mixers |
| LNETWIN     | LecNet software on disk                         |
| 21529       | Serial cable to connect the LI24 to a PC        |

# SERIAL CABLE WIRING DIAGRAM

The serial port on the LecNet device is a minimal RS-232 implementation. The figure shows the wiring diagram to accommodate interconnection with either a 9 or a 25 pin serial port on a PC or other serial device.



## AMX Programming Notes

If you are using an AMX system to control your LecNet equipment, you'll want to purchase the Lectrosonics PT3 Protocol Translator. The PT3 connects between the AMX bus and any LecNet equipment. With the PT3, the LecNet equipment looks just like native AMX equipment. The PT3 is the fastest and most productive way to control LecNet devices with an AMX system.

## SERIAL PORT COMMANDS AVAILABLE

All LecNet devices use a modification of the typical one-to-one connection between two RS-232 compatible devices. LecNet devices have both an RS-232 transmitter and receiver section. The transmitter section is “tri-stated”, or placed in a high impedance mode, until the particular device is addressed. To facilitate the simple parallel connection of multiple devices on a single RS-232 port, an addressing scheme is employed to route commands from the host to the proper LecNet device. When a device receives its address from the host computer, it temporarily turns on its RS-232 transmitter long enough to send whatever data is requested by the host. In this way, multiple devices may drive a single transmit signal back to the host, because only the addressed device will turn on its transmitter.

Valid address values are 128-254 (80 hex-FE hex). The VI24 is a special case and always occupies address 255 (FF hex). Because a LecNet device will interpret any single data byte whose value is greater than 127 as an address, single byte data (as opposed to addresses) sent from the host must be in the range of 0-127. If a data value needs to be sent from the host that exceeds 127, the host must format two bytes of output such that the first byte is the lower 7 bits of the 8 bit value, and the second byte is 1 if the MSB of the data byte is 1, or 0 if the MSB of the data byte is 0.

All interchange of commands and data with any LecNet device should be done in hex rather than ASCII. The only exception to this is the return data on the Get Device Name command (see command description below). Each LecNet command must be preceded by the address of the device to be controlled. If a device with the requested address exists on the system, it will respond by sending a 0 (0 hex, not ASCII) back to the host. Thus, each interchange with a LecNet device follows this pattern:

- 1) Host sends device address in hex (1 byte);
- 2) Host receives byte of 0 hex from the LecNet device as acknowledgment;
- 3) Host sends command (1 byte, hex) to the LecNet device;
- 4) Host and LecNet device exchange data based on particular command sent.

Note that some LecNet commands cause LecNet devices to return an additional acknowledgment byte of data to confirm the end of a transaction. This is most typical of commands that cause the LecNet device to be busy for more than a few milliseconds processing the command. The additional acknowledgment byte lets the host know that the LecNet device is no longer busy and can receive more commands. If a command does return an additional acknowledgment byte, this will be explicitly stated in the command description.

As an example of a specific interchange between a host and a VI24 the following general procedure would be used to get a name string back from the VI24:

Set up the communications parameters of the device which will be the host. The correct parameters for all LecNet devices are 9600 baud, no parity, 8 data bits, 1 stop bit. This must only be done once when the host is initialized.

- 1) Host sends device address 255 (1 byte).
- 2) Host receives byte of 0 hex from the VI24 as acknowledgment;
- 3) Host sends command 1 hex (1 byte) to the VI24 to get the name data;
- 4) The VI24 sends to the host 5 bytes. The first byte is 4 hex, which is the number of bytes in the VI24's name string. The VI24 will then send the ASCII characters “V”, “I”, “2” and “4” to the host.

The following section is a listing of available VI24 commands. The word "Host" in the command descriptions means the IBM PC or compatible, AMX controller, or Crestron controller to which the VI24 is connected.

## General Device Commands

**Get Device Name** - Causes the VI24 to send its "name" string back. The first data byte is the length of the name string, and the rest of the data bytes are the device name.

**Host sends command** - 1

**Host receives data bytes:** Byte 1 is the length of the name string (4 for the VI24), bytes 2 thru 5 are the ASCII values for "VI24".

**Get Firmware Version** - Causes the VI24 to send to the host the version number of the current firmware (times ten). For example, Version 1.0 software would be returned as 10 (decimal).

**Host sends command** - 25

**Host receives data byte:** firmware version.

**Get Output Status** - Causes the VI24 to send the on/off status of each of its 24 output pins, packed into three bytes.

**Host sends command** - 20

**Host receives data bytes:** The byte representing output pins 1-8 is sent first, then 9-16, then 17-24. Within each byte, the lowest-numbered pins occupy the least significant bits. For example, in the case where output pins 1 and 2 are on and all the rest are off, the three bytes sent would be 3, 0, 0.

**Link/Unlink LecNet** - Causes the VI24 to connect the PC port through to the LecNet and pause operation, or to disconnect the PC port from the LecNet and resume operation. This allows the device connected to the PC port to send commands to other devices connected to the LecNet via the VI24.

**Host sends command** - 40

**Host sends byte** - 1 for link, 0 for unlink

**Host receives confirmation byte:** always 0

**Check Link/Unlink Status** - Causes the VI24 to indicate whether the PC port is currently linked to the LecNet (and normal VI24 operation paused) or the PC port is not linked to the LecNet (and the VI24 is operating normally).

**Host sends command** - 41

**Host receives data byte:** 1 for linked, 0 for not linked

## SPECIFICATIONS

|                            |   |
|----------------------------|---|
| <b>PC Port:</b>            | RS-232C, 9600 baud, 8 data bits, no parity, 1 stop bit  |
| <b>Logic Outputs:</b>      | DB-25 connector. Each output sinks to ground when the associated conditions are met. Max. current per pin 1.5A pulse, 250mA continuous. |
| <b>Power Requirements:</b> | 70 mA at 20VAC, 1.5 Watts max.  |
| <b>Weight:</b>             | 0.5 lbs.  |
| <b>Dimensions:</b>         | 3.25" wide, 1.25" high, 4.50" deep  |

*Specifications subject to change without notice.*

## SERVICE AND REPAIR

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check out the interconnecting cords and then go through the TROUBLE SHOOTING section in the manual

We strongly recommend that you **do not** try to repair the equipment yourself and **do not** have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. **There are no adjustments inside that will make a malfunctioning unit start working.**

LECTROSONICS' service department is equipped and staffed to quickly repair your equipment. In warranty repairs are made at no charge in accordance with the terms of the warranty. Out of warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out of warranty repairs.

## RETURNING UNITS FOR REPAIR

You will save yourself time and trouble if you will follow the steps below:

- A.** DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 am to 4 pm (Mountain Standard Time).
- B.** After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the outside of the shipping container.
- C.** Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.
- D.** We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

**Mailing address:**  
Lectrosonics, Inc.  
PO Box 15900  
Rio Rancho, NM 87174  
USA

**Shipping address:**  
Lectrosonics, Inc.  
581 Laser Rd.  
Rio Rancho, NM 87124  
USA

**Telephones:**  
Regular: (505) 892-4501  
Toll Free (800) 821-1121  
FAX: (505) 892-6243

**World Wide Web:** <http://www.lectrosonics.com>

**Email:** [sales@lectrosonics.com](mailto:sales@lectrosonics.com)

## LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Lectrosonics, Inc. will, at our option, repair or replace any defective parts without charge for either parts or labor. If Lectrosonics, Inc. cannot correct the defect in your equipment, it will be replaced at no charge with a similar new item. Lectrosonics, Inc. will pay for the cost of returning your equipment to you.

This warranty applies only to items returned to Lectrosonics, Inc., shipping costs prepaid, within one year from the date of purchase.

This Limited Warranty is governed by the laws of the State of New Mexico. It states the entire liability of Lectrosonics Inc. and the entire remedy of the purchaser for any breach of warranty as outlined above. NEITHER LECTROSONICS, INC. NOR ANYONE INVOLVED IN THE PRODUCTION OR DELIVERY OF THE EQUIPMENT SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT EVEN IF LECTROSONICS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF LECTROSONICS, INC. EXCEED THE PURCHASE PRICE OF ANY DEFECTIVE EQUIPMENT.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

### **LECTROSONICS, INC.**

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581 LASER ROAD  
RIO RANCHO, NM 87124 USA

January 17, 2001