INSTALLATION and STARTUP GUIDE

SPNCWB

Digital Conference Interface

Hardware and Software Installation and Setup

IMPORTANT

See page 16 for
Minimum Setup Requirements

Visit the Lectrosonics Support web site:

www.lectrosonics.com/Support

Also link from the home page: www.lectrosonics.com

Advanced Acoustic Echo Canceller

US Patent 8,619,970 B2

Fill in for your records:

Serial Number:

Purchase Date:

LECTROSONICS®
Rio Rancho, NM, USA
www.lectrosonics.com

Important Safety Instructions

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure -- voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with a dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not def eat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15) **WARNING** -- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
16) The AC mains plug, or appliance coupler shall be readily available to the operator as a means of power disconnection, if applicable.
17) Unit shall be connected to a MAINS socket outlet with a protective earthing connection.
18) Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
19) Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
20) Do not use the telephone to report a gas leak in the vicinity of the leak.
21) Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
22) "CAUTION: To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord"

SAVE THESE INSTRUCTIONS

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Introduction

The SPNCWB interface combines the audio from a telephone line, two codecs and microphones in the local sound system to provide natural sounding telepresence and audio conference meetings. A powerful AEC (acoustic echo canceller) is provided, which converges fast enough to follow multi-site bridging and gain proportional automatic mixing without losing convergence depth. The AEC can handle an unlimited number of microphones and will re-converge quickly enough to follow the movement of a wireless microphone.

Three sites can be bridged into a single conference with one SPNCWB processor. Three additional sites can be added with another processor with signals combined into the ASPEN matrix for extensive routing and processing options.

The outstanding performance of the AEC is further enhanced with patented, seamless automatic mixing. The automatic mixing is applied at the crosspoints in the matrix, which allows each signal source to exhibit a different behavior at the system outputs. This is useful, for example, when the signal must participate in the conference using one of several automatic mixing modes on some outputs, and be recorded with no processing on other outputs.

For convenience, a TCP/IP addressable Ethernet port and built in power amplifier are included.

This manual covers hardware installation and wiring and the installation of ASPEN software. Once the processor is communicating with a computer, refer to the Help files in the software control panel for additional setup and configuration settings.

Inspection of the Unit

Compare the packing list enclosed with the unit with the original order. Inspect all items for damage. Immediately call 1-800-821-1121 to report any items that are missing or damaged. The sooner you notify us, the sooner you will get any needed replacement items shipped to your location.

**Crestron® is a registered trademark of Crestron Electronics, Inc.*

Controls and Features

Front Panel

Headphone Monitor

Standard 1/4 inch jack and level control. Drives both channels of stereo headphones.

MCU Recovery (recessed pushbutton)

Used in the procedure to recover from an interrupted firmware update procedure. See section on Firmware Update Procedure for details on usage.

USB Port

Standard USB connector for the setup and control from a computer using Windows XP, Vista or Windows 7 operating system. The USB port is also used for firmware updates.

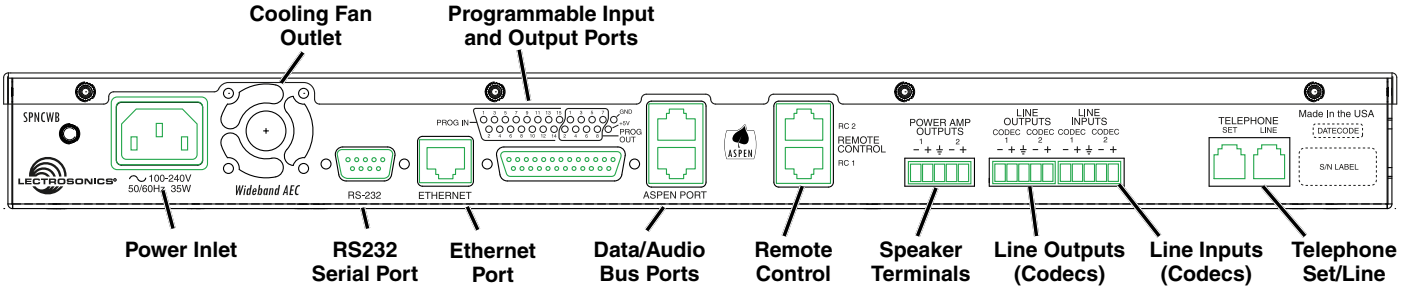
Firmware Update (recessed pushbutton)

Used in the procedure to update the firmware in the processor. See the section on ***Firmware Update Procedure*** for details.

Status LEDs

- Comm LED - indicates USB, RS-232 and network communication
- Alert LED - blinks to indicate fault or error
- Alert LED - glows steady in firmware update mode
- Power LED - glows to indicate power ON

Rear Panel



Programmable Input and Output Ports

Programmable inputs and outputs used to control levels, settings, indicate the current state of a programmable input and control a variety of other parameters.

ASPEN Bus Data/Audio Ports

This gigabit bus transports audio and data from one board to the next through CAT-6 cabling (maximum 2 meters or 6.5 ft length) and RJ-45 connectors. Processors are normally installed with the Master unit on top and Slave units below it. The cabling is then connected from the uppermost jack on one board to the lowermost jack on the unit just above it.

Remote Control

These RJ-45 jacks provide interfaces for RCWTH4 remote control units. Each jack is assignable to CODEC 1 or 2, or to the telephone line.

Audio Inputs and Outputs

Analog audio input and output connectors for the Codec ports.

Telephone Set/Line

RJ11 jacks for connecting a standard telephone line and a single-line telephone set.

Hardware Installation

Installing the chassis into a rack

Install the chassis so that the cooling fan vent is not blocked. Mount with 4 rack screws using the appropriate mounting holes. Use nylon washers to prevent damage to the front panel's finish when tightening the mounting screws.

All ASPEN processors have internal switching power supplies that can tolerate voltages ranging from 100 to 240 VAC. Use an approved power cord with an IEC 60320 C13 connector.

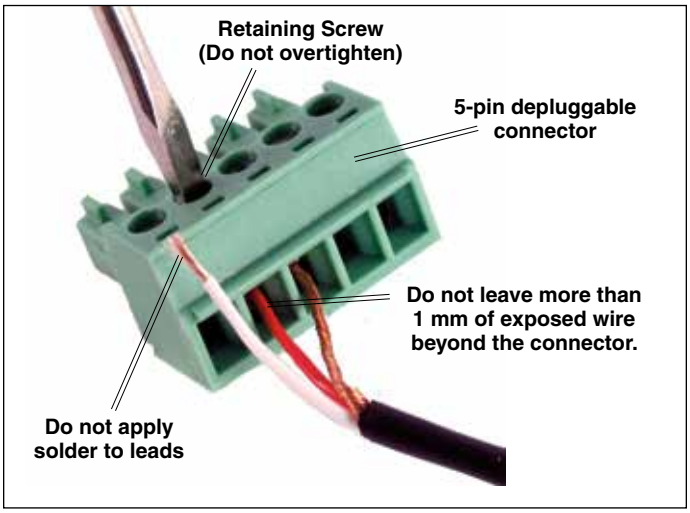
Cables

It is recommended that you use lacing bars for cable strain relief when mounting in a rack. Use only professional audio cable with proper shielding – typically, two conductor plus ground/shield.

Audio Connectors

The analog audio inputs and outputs are connected through 5-pin de-pluggable connectors. Strip the insulation back 1/8 to 3/16" but do not tin (apply solder to) the leads. Insert the wire into a de-pluggable connector, leaving less than 1 mm of bare wire exposed, then tighten the retaining screw.

Caution: Do not overtighten the screws.



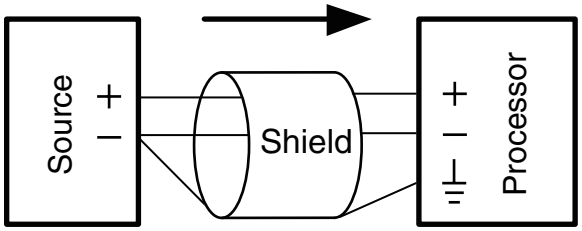
Note the labeling on the rear panel for the positive and negative leads. Ground is shared between two connections (the center pin).

Note: ASPEN processors do not have a "pin 1 problem." Inputs and outputs are true differential connections.

Audio Inputs – Unbalanced

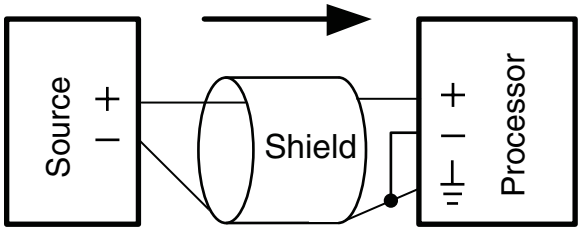
Unbalanced audio sources include items such as consumer VCR's, DVD players, etc., which can be connected with either 2-wire or 3-wire cables. The (+) terminal of the source is connected to the (+) terminal of the processor. The shield and (–) connections are made as shown here.

Three wire cables should have the shield connected to the (–) connector at the source end of the cable.



Unbalanced source to
ASPEN input – 3-wire cable

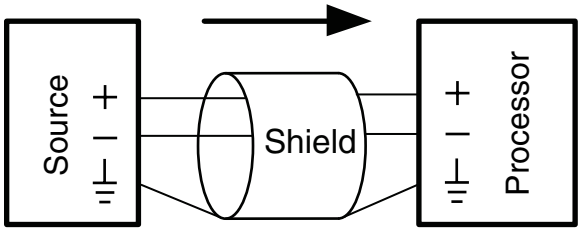
Two wire cables should have a jumper between the processor (–) input and ground.



Unbalanced source to
ASPEN input – 2-wire cable

Audio Inputs – Balanced

Balanced audio sources connect to the processor inputs in a straight "pin to pin" configuration.

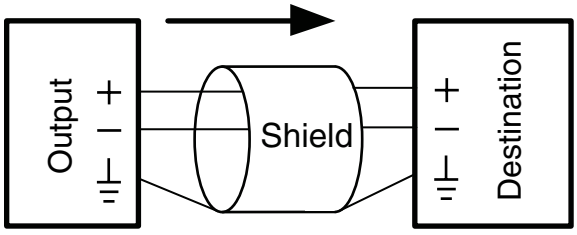


Balanced source to
ASPEN input

Audio Outputs

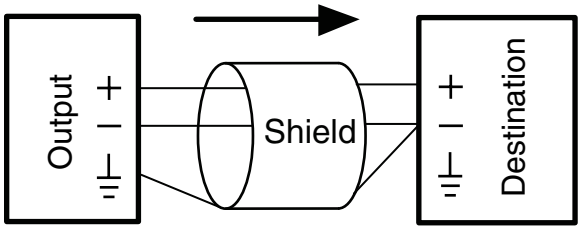
The line outputs are a balanced differential configuration which can drive balanced or unbalanced inputs on other audio equipment with the wiring shown here.

Balanced output to a balanced input is a straightforward “pin to pin” configuration.



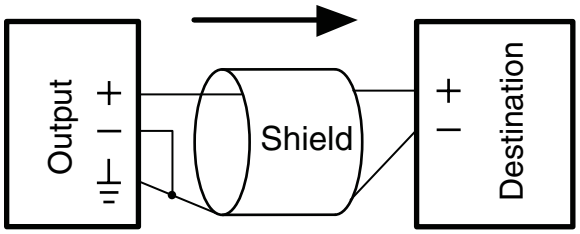
Balanced output to balanced destination

Balanced output to unbalanced input with a 3-wire cable is connected with the cable shield added to the (–) terminal on the destination input.



Balanced output to unbalanced destination – 3-wire cable

Balanced output to unbalanced input with a 2-wire cable is connected with the output (–) connected to the cable shield at the processor output.



Balanced output to unbalanced destination – 2-wire cable

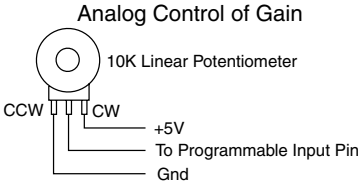
Telephone Line Jack

Connect a standard telephone cable with RJ11 connectors between the back panel Telephone Line Jack and the host telephone system.

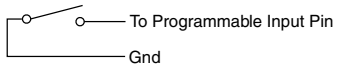
Programmable Inputs

Programmable inputs are provided to enable external control over a variety of parameters. Each input can respond to a contact closure, a DC voltage source, or the variable voltage output from a potentiometer. The following illustrates common connections to the programmable input pins.

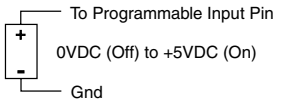
Potentiometer Connection for Analog Control of Gain

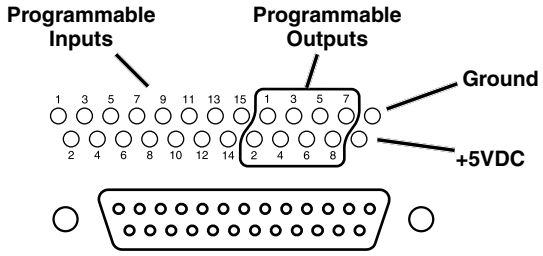


Contact Closure as Programmable Input



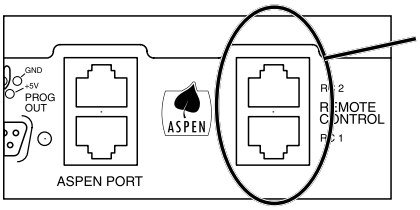
DC Voltage Source as Programmable Input



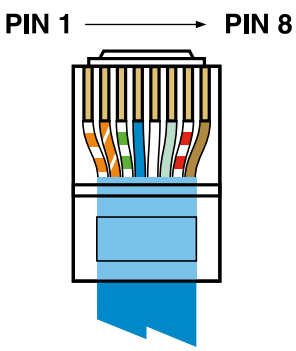


CODEC and TEL Remote Control Ports

These RJ-45 connectors are used with the RCWTH4 remote control module, connected with standard CAT-5 cabling. Each port is assignable to Codec 1, Codec 2 or the telephone line.



1	GND
2	Connect Button
3	Privacy Button
4	Volume Up Button
5	Volume Down Button
6	Privacy LED
7	Connect LED
8	GND



Programmable Outputs

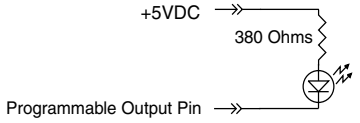
Programmable outputs are used for several purposes:

- indicate the current state of a programmable input
- monitor activity on telephone or codec interfaces
- monitor active preset changes

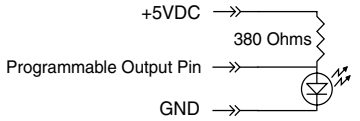
Each programmable output is the electrical equivalent of a contact closure to ground. When a programmable output is “active” it conducts current to ground. When the programmable output is “inactive,” no current flows to ground. The maximum usable voltage for the programmable outputs is 40 V and they will safely conduct up to 100 mA DC continuous.

Both LEDs and 5V relay coils can be powered by the +5 V DC pins on the programmable input connector, as long as the maximum combined current for all LEDS and relay coils does not exceed 100 mA.

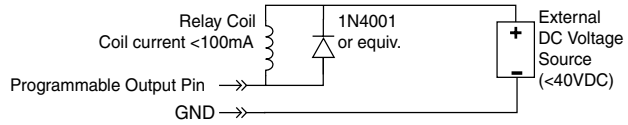
LED is ON when the programmable output is active



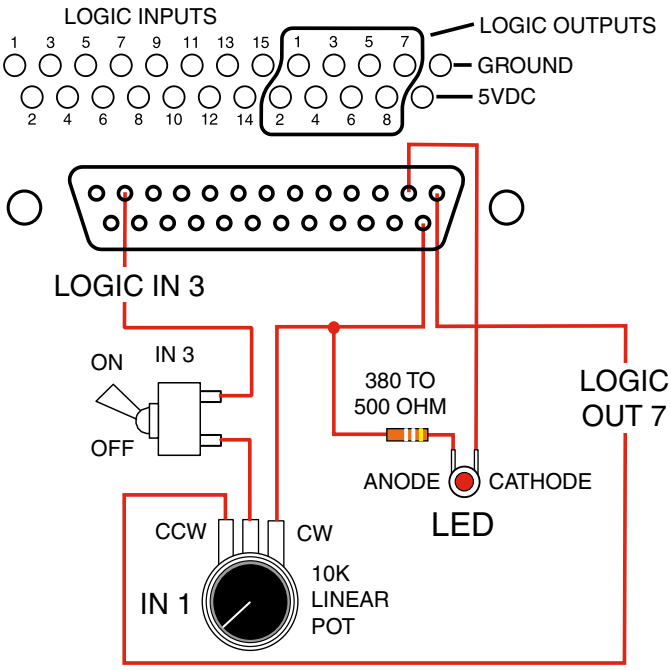
LED is OFF when the programmable output is active

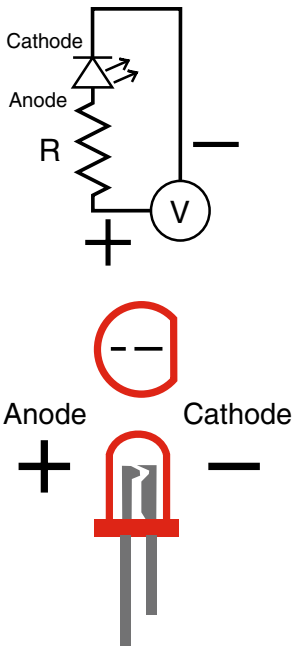


Relay is on when the programmable output is active



Note: The diagram above shows an external DC source powering the relay coil. This is necessary whenever coil voltages exceed 5 volts.

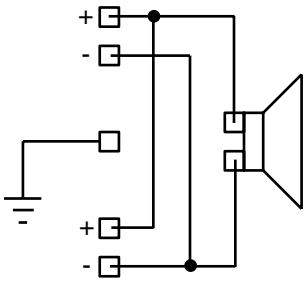




Power Amp Outputs

The amplifier is designed to run continuously (idle or with a load) without heat buildup, making it ideal for permanent installations where prolonged operation is required.

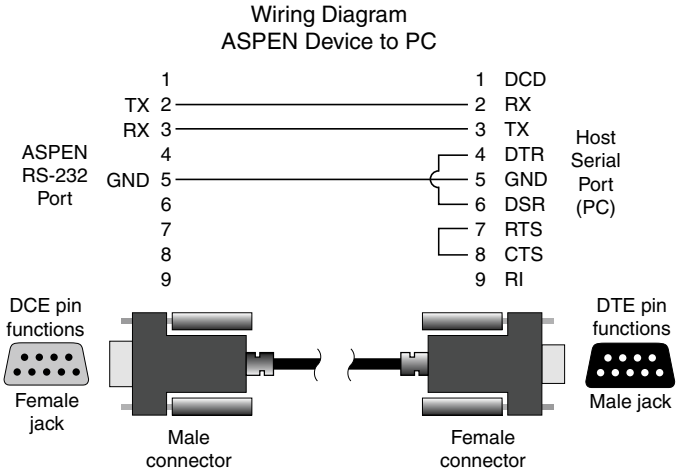
Each output can drive a variety of loads, including loudspeakers, long cable runs and headphones. The BTL (bridge tied load) configuration allows the two channels to be wired in parallel on a common load to double the output power.



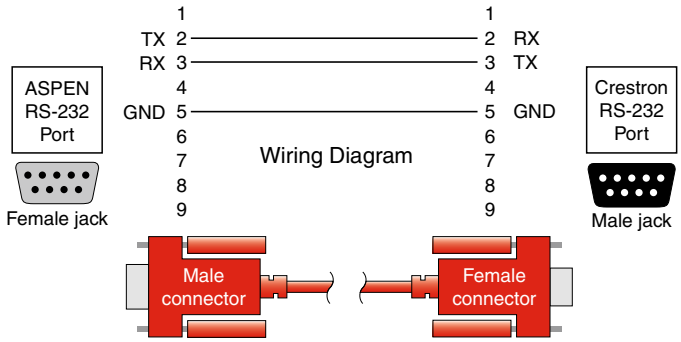
BTL output wiring

ASPEN RS-232 Port

Here is the wiring diagram for the ASPEN RS-232 Port for connecting to a PC.



Crestron® RS-232 Port Wiring



Connecting the Master for the First Time

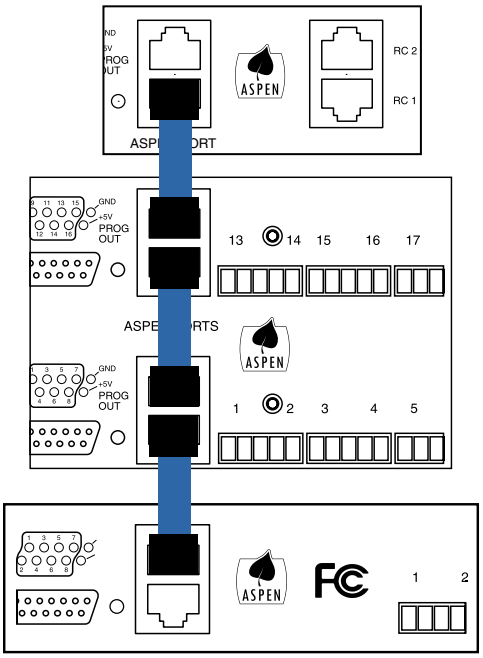
NOTE: Install ASPEN software before connecting the Master unit to a computer.

The computer operating system will automatically detect and configure a USB port for the Master unit when it is connected and turned on the first time. Wait for the screen message that advises that the new device has been configured and is ready for use.

Cabling Of Stacked Units

In a stacked configuration, ASPEN processors must be interconnected as shown here. The ASPEN bus is bidirectional, allowing data and audio to be propagated forward and backward through a single cable connection. Each Slave unit in a stack gathers data and audio signals from the unit below it, adds its own signals and passes the total on to the unit above it. At the top of the stack, the Master unit gathers all signals from below, adds its own and then sends the total back down the bus to all Slave units below it. This architecture allows all Slave units to have access to the mixing data and audio in all 48 final mixes.

Each circuit board has an upper and a lower ASPEN bus connector. Since there are two circuit boards in a 2RU unit such as the SPNTWB, the circuit boards are connected in the same manner as if they were each in a separate chassis.



The processors automatically configure themselves for Master and Slave status as determined by the cabling. If a unit is connected to another unit above it through the upper connector, it is automatically configured as a Slave. If there is no unit above it, then it becomes the Master.

Software Installation

NOTE: Uninstall any previous version before installing the software.

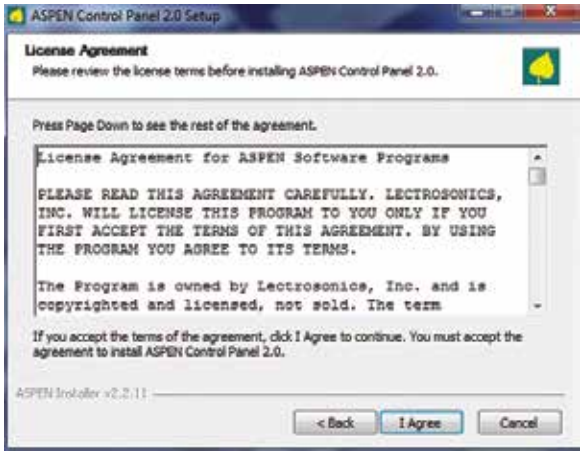
The example shown here illustrates the installation procedure using a Windows operating system. The screens that appear at each step using another operating system will vary, but the general steps are very similar.

Visit http://www.lectrosonics.com, hover your mouse over **Support** and click on **Aspen Support**, then **Control Panel.**

Download the Control Panel Installer.

Open the ASPEN Software Installer.

The next screen displays the ***License Agreement***. Click on I Agree to continue.



The third screen displays an option to select the desired installation. It is best to check all three boxes so the USB driver, Control Panel and Help utility will all be installed.

Follow the on-screen prompts to complete the installation. On the last screen, click ***Finish*** to exit the installer.

Using the Control Panel

To connect to connect a running ASPEN device, choose a connection method from the ***Connect*** menu: ***USB***, ***Network*** or ***Serial***. The device can be configured directly when connected.

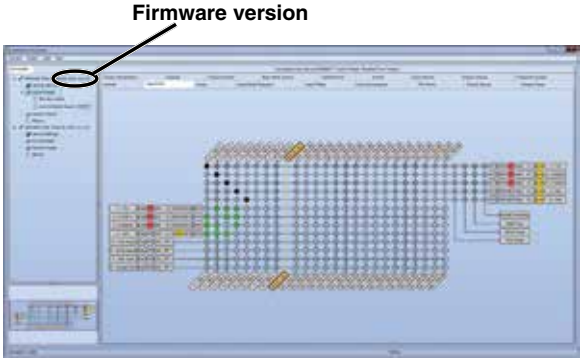
To work on a system design project, choose an option from the ***Project*** menu. You may create a new project or open an existing project.

Choose ***Help***->***ASPEN Online Help***... to open an extensive ***Help*** system describing the may features and functions of the Control Panel program.

Software and Firmware Updates

On ASPEN models with a front panel LCD, the firmware version is displayed on the Main menu screen.

For all ASPEN models, the firmware version is displayed in the Control Panel program when connected to the processor.



Obtaining Updates

The latest versions of software and firmware can be downloaded from the ASPEN support site:

www.lectrosonics.com>SUPPORT

ASPEN Control Panel Updates:

Open the Control Panel program and choose ***Help***->***Check for Updates***... from the Main menu. If and update is available, it will be downloaded and installed automatically.

Firmware Updates:

Downloaded files arrive in a single .zip file with the model number and version indicated by the filename.

Extract the file to a folder on your local drive. The resulting filename will indicate the model number and version, followed by the extension ".update."

Creating an ASPEN Installer Disk

To create an Aspen Install Disk, go to the following site and download the ASPEN Installation Disk .iso file.

www.lectrosonics.com>SUPPORT

Link from the home page:

Save the file to your local drive in a familiar location. Open a disk copier utility such as Roxio Classic and select the operation to *Burn from a Disk Image File*.

> NOTE: The .iso file cannot be simply copied to the disk. The disk recording utility must run a process that creates a disk from a stored image file.

The .iso file format is recognized by almost any disk creation software.

Firmware Update Procedure

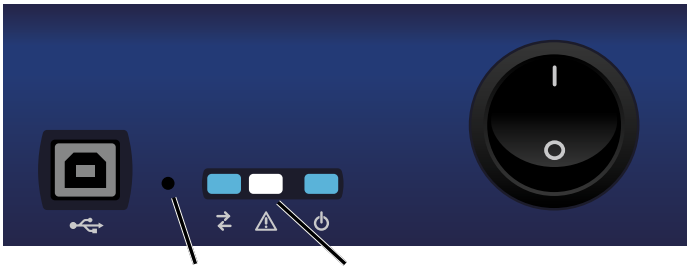
Update Procedure

1) It is assumed that the USB drivers and ASPEN control panel software have been installed. If not, go the the web site and download the Control Panel Installer and follow the instructions to install the USB driver, GUI and Help file.

www.lectrosonics.com>SUPPORT

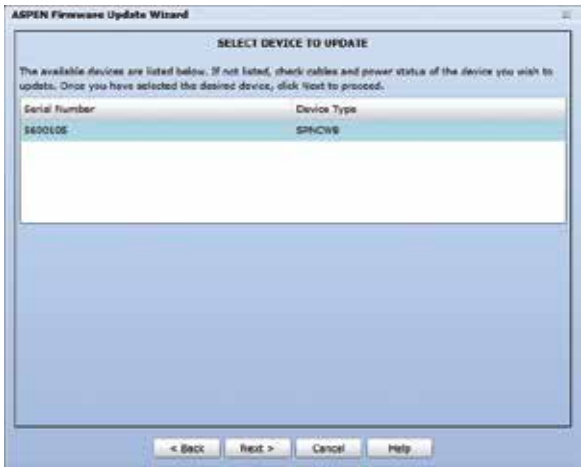
2) Launch the Control Panel program. After the panel opens, click on ***Connect->Update Firmware...*** The Update Wizard will open, with instructions on connecting and configuring the processor.

3) On the processor, hold the Firmware Update pushbutton switch in with a pen or paper clip and turn on the power to the processor. The unit will boot into the firmware update mode and the white Alert LED on the processor front panel will glow.

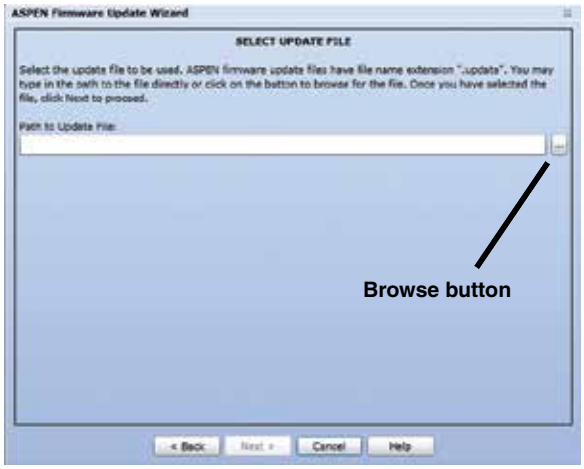


4) Connect the processor to the computer with the USB cable.

5) Click on Next in the control panel and another page will open, allowing you to select the device to be updated. Highlight the device and click Next to proceed.



6) The next page allows you to select the update file. Use the “Browse” button to point at the firmware update file and click ***Next*** to continue.



7) Review the information displayed and click on ***Start Update***.

8) Do not disturb the USB cable connection during the update process. The firmware update takes up to 15 minutes to complete. Be sure the computer does not go into hibernation or sleep mode during the update process.

NOTE: If the procedure is interrupted, see the next section on recovery

9) When the update is complete, click ***Finish*** to exit the Update Wizard.

10) Cycle the power on the processor to restart using the updated firmware.

MCU Recovery from Interrupted Firmware Update Procedure

If instructed to do so by Lectrosonics Customer Support, the firmware in a non-functioning unit can be restored.

Launch the Control Panel program. After the panel opens, click on ***Connect->Update Firmware...***

In the lower part of the screen is a check box that is used only for the recovery process. When the box is checked, the instructions will change to describe the recovery procedure.

Follow the on-screen prompts to return the unit to normal operation.

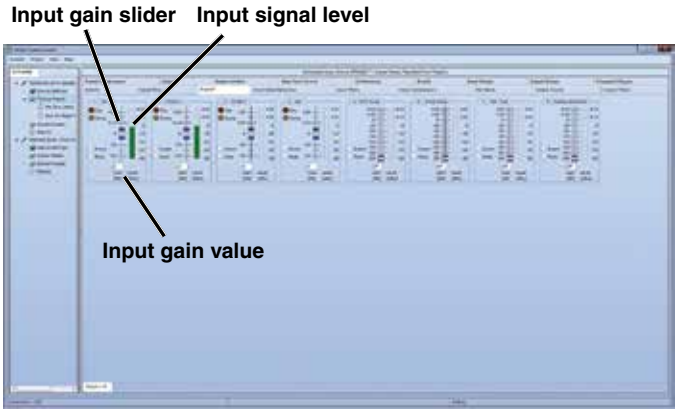
Minimum Setup

A required minimum setup is needed to allow the processor to pass signals and provide acoustic echo cancellation:

- Define the Inputs and adjust gain
- Define the Crosspoints
- Define the mixes to be used as signal sources for the outputs
- Define the Outputs and adjust levels
- Configure the Conferencing Connections

Inputs

Click on the ***Inputs*** tab. The setup screen provides controls for gain, signal polarity (phase) and muting, with level indicators. Connect signal sources and adjust the gain as needed.



Inputs **screen**

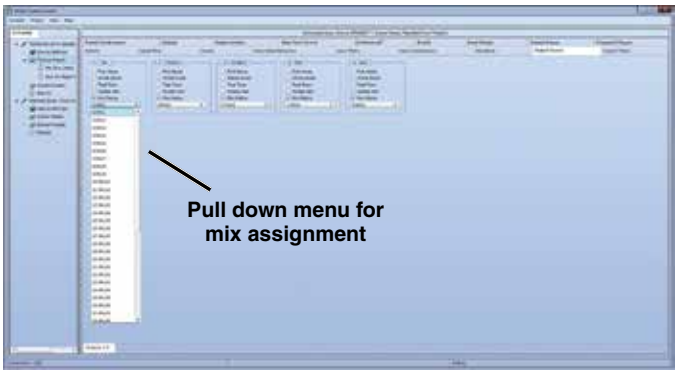
Crosspoints

Click on the Mix Matrix tab. Crosspoints must be assigned to the mixes that are used as the signal sources for the outputs.

Mix Matrix **screen**

Output Sources

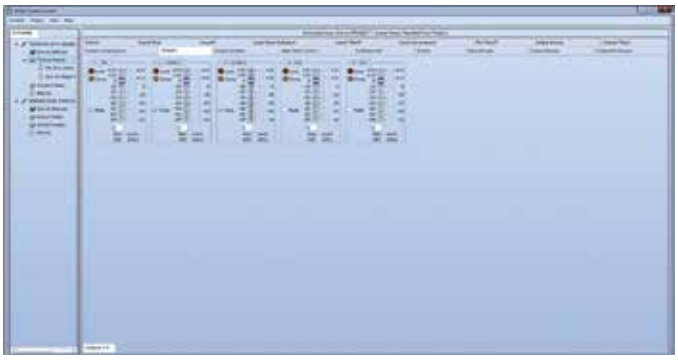
Click on the ***Output Source*** tab. These assignments pass the matrix mixes to the outputs.



Output Source **screen**

Outputs

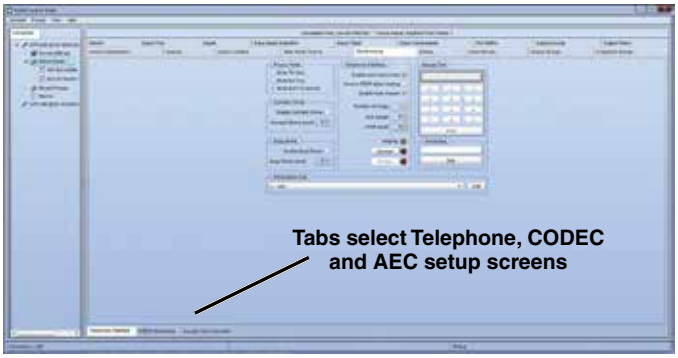
Click on the ***Outputs*** tab. This allows adjustment of the gain and muting of each output with level metering.



Outputs **screen**

Conference Connections

Click on the ***Conferencing*** tab. Conferencing settings define the behavior of the Codec and Telephone interfaces.

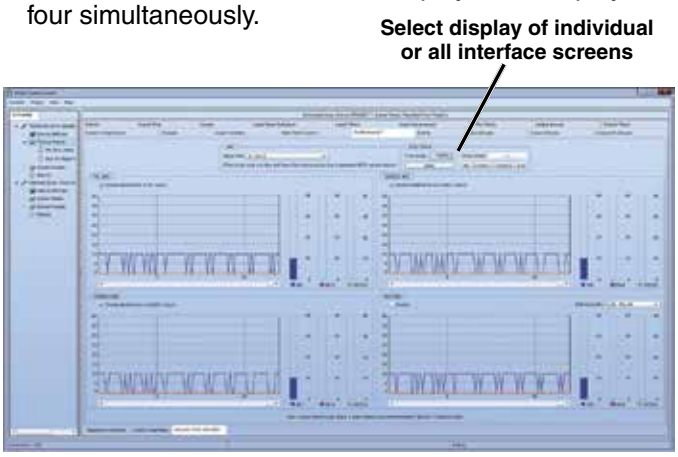


Conferencing **screen (*Telephone Interface* setup selected)**

Acoustic Echo Canceller

Click on the ***Acoustic Echo Canceller*** tab at the bottom of the conferencing screen. The AEC (acoustic echo canceller) can be enabled on any or all of the conference interfaces. Strip chart metering indicates the performance of the AEC on each interface.

Select the desired interface to display, or to display all four simultaneously.

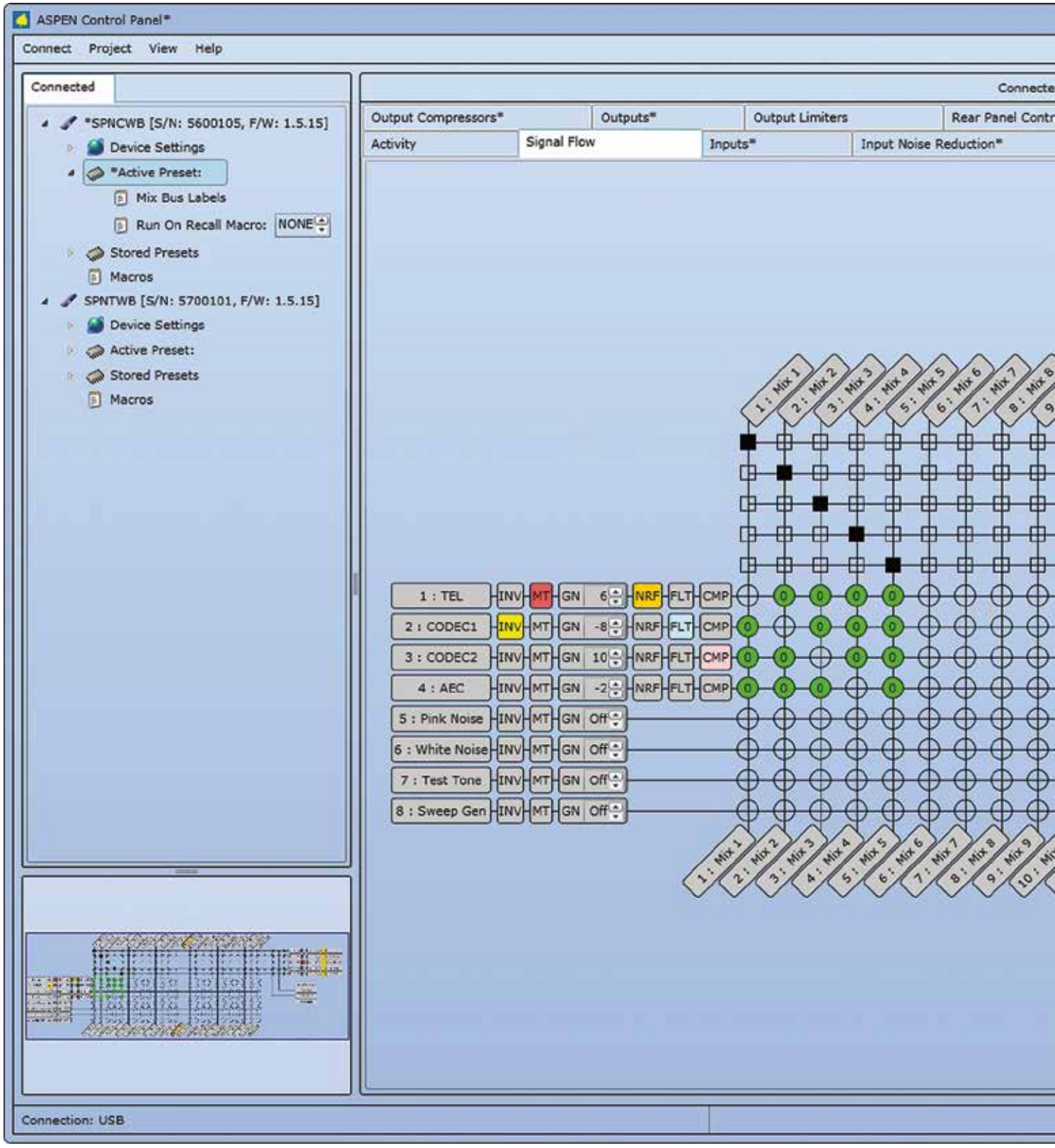


Conferencing **screen (AEC setup selected)**

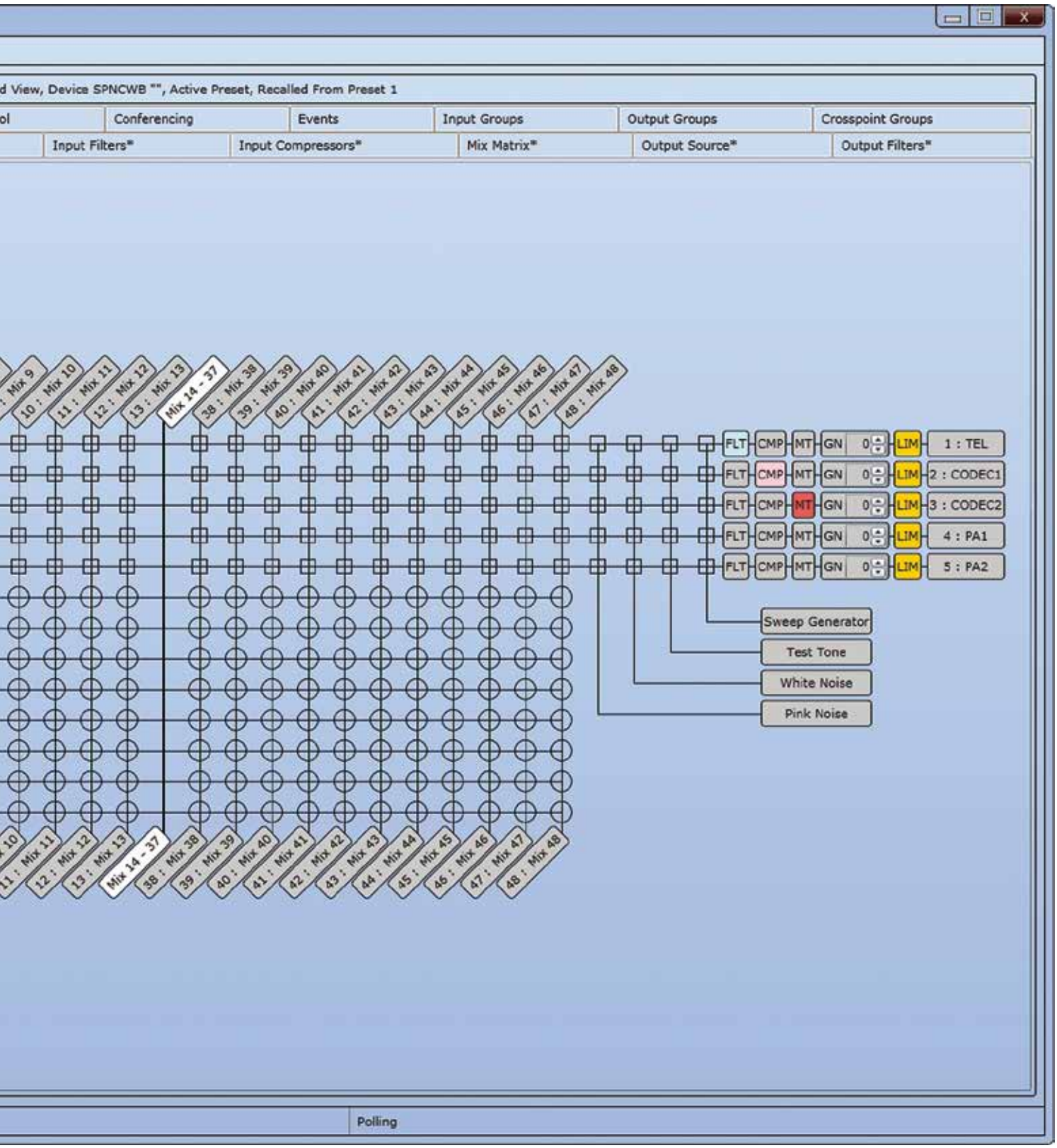
The Signal Flow Screen

Select the Signal Flow tab. This comprehensive, intuitive interface allows settings to be made through the entire signal chain. Double left click and single right click actions open setup and status dialogue boxes.

The view may be panned or zoomed as needed. Hold down the CTRL key and press + to zoom in. Hold down the CTRL key and press - to zoom out. The mouse scroll wheel can also be used. Hold down the CTRL key and turn the mouse wheel up or down to zoom in or out.



Unused crosspoint columns can be hidden and unhidden by highlighting a range of Mixes across the top, followed by a right click and selection of the desired state.



Network Setup

The SPNCWB is IP addressable over an ordinary Ethernet network. The use of DHCP to configure the network interface is recommended for easy setup.

Using the control panel software, navigate to DeviceSettings>Network and check the DHCP box.

Connect the processor into the network and cycle the power. The processor will boot up and the DHCP server will assign an IP address. The address can be viewed in the ***Network*** window.

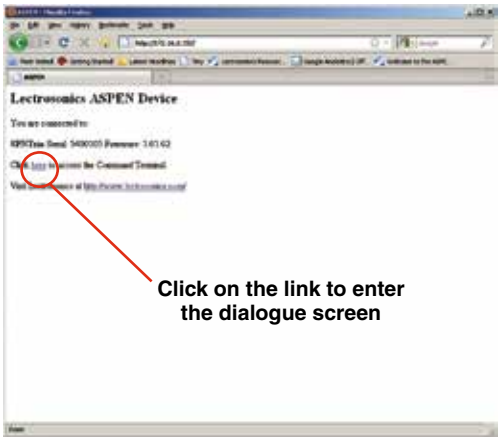
NOTE: Changes to the network settings do not take effect until the processor power is cycled off and back on again.

Web Browser Interface

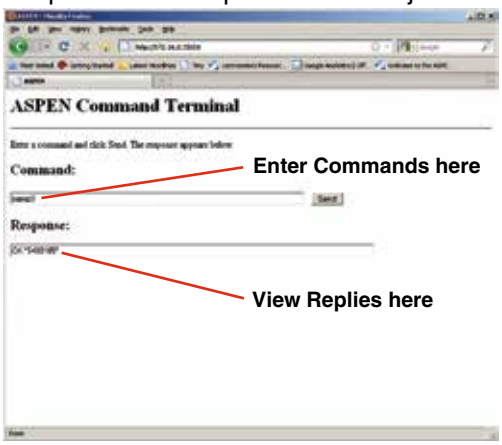
A simple interface is provided to communicate directly with the processor through a network using the HTTP port and a standard browser. This interface provides access to the processor in the same manner as the Command Terminal interface in the software.

Launch your browser and enter the IP addresses assigned to the processor in the top window.

When the processor is connected a summary screen will appear to verify the connection. Click on the link to enter the dialogue screen.



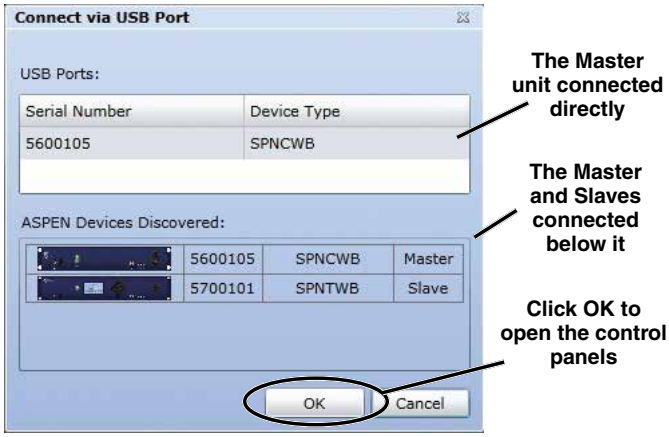
Enter ASPEN commands and view the replies to verify the processor setup or to make adjustments.



Stacking Multiple Units

If Slave units are not powered up when the Master unit boots up, the Slave may not be detected for several minutes. It is good practice to turn all units on simultaneously or turn on Slave units before turning on the Master unit.

The available processors will appear in a “stack” in the control panel. The Master unit details will appear at the top, with Slave units below it appearing in the order that they are connected with the cable connections to the ASPEN port jacks.



Refer to the cabling diagram for the ASPEN ports in the section entitled Hardware Installation.

Refer to the Help Files

Once the processors are installed, configured and communicating with a computer system, refer to the Help files in the software ASPEN Control Panel program for additional information regarding the available settings, adjustments and control.

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 the interconnecting cables and then go through the **Troubleshooting** section in this 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**.

The 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

For timely service, please follow the steps below:

A. DO NOT return equipment to the factory for repair without first contacting us by e-mail 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 A.M. to 4 P.M. (U.S. 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 or FEDEX 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.

Lectrosonics USA:

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

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

Telephone:
(505) 892-4501
(800) 821-1121 Toll-free
(505) 892-6243 Fax

Web:
www.lectrosonics.com

E-mail:
sales@lectrosonics.com

Lectrosonics Canada:

Mailing Address:
720 Spadina Avenue,
Suite 600
Toronto, Ontario M5S 2T9

Telephone:
(416) 596-2202
(877) 753-2876 Toll-free
(877-7LECTRO)
(416) 596-6648 Fax

E-mail:
Sales: colinb@lectrosonics.com
Service: joeb@lectrosonics.com

FCC PART 15 COMPLIANCE INFORMATION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense

FCC PART 68 COMPLIANCE INFORMATION

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the ACTA registration number and ringer equivalence number (REN.) If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area.

This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right the file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact:

Lectrosonics, Inc.
581 Laser Rd. Rio Rancho, NM 87124
Tel: 505-892-4501
Fax: 505-892-6243

If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.

This equipment uses the following USOC jacks: RJ11C

It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightening strikes and other electrical surges.

INDUSTRY CANADA NOTICE

This product meets the applicable Industry Canada technical specifications/Le présent materiel est conforme aux specifications techniques applicables d'Industrie Canada.

The Ringer Equivalence Number is an indication of the maximum number of devices allowed to be connected to a telephone interface.

The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique.

La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5."

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. or an authorized dealer, 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 liablility 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®

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(505) 892-4501 • (800) 821-1121 • fax (505) 892-6243 • sales@lectrosonics.com

3 April 2019