NEAR®

Model 3XL
Power Amplifier

Installation/Use and Software Manual

NOTICE

Every effort was made to ensure that the information in this manual was complete and accurate at the time of printing, however, all information is subject to change.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: To Reduce the Risk of Fire or Electric Shock, Do Not Expose this Apparatus to Rain or Moisture.

Always comply with the following basic safety precautions when installing and using the unit:

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 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 other amplifiers) that produce heat.**

9. **DO NOT defeat 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 a third grounding prong. The wide 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 and/or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**

11. **Only use attachments/accessories which are specified by the manufacturer.**

12. **Unplug this apparatus during lightning storms or when unused for long periods of time.**

13. **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.**

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE ANY FRONT/BACK COVERS OR PANELS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions.

WARNING:

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

NOTICE FOR DIGITAL EQUIPMENT

In order to obtain full performance of NEAR digital devices, always download and install the latest drivers, firmware and/or software versions available online at: *http://www.bogen.com*

Contents

The **NEAR® 3XL Power Amplifier** is a highly flexible and intelligent digital audio, 2-channel, Class-D power amplifier, delivering up to 350W per channel @ 4/8/16Ω and 70V/100V Constant Voltage Lines, in Direct Drive, without using internal output transformers. A Line Output with independent DSP parameters for driving additional line-level devices.

To guarantee maximum reliability, the two output channels include highly efficient Class-D amplifiers, with a Switch Mode Power Supply, including Power Factor Correction, powering both amplifier channels in Bridge Tied Load (BTL) mode. The two amplifier output stages are very low noise and low-distortion with efficiency up to 90%, and are also equipped with a full set of circuit protections.

Designed to meet the most demanding residential sound system applications, NEAR 3XL's set of sophisticated controls and parameters for loudspeakers are implemented using a powerful Digital Signal Processor (DSP) running at 48kHz/24bit, and include high-performance 24bit AD/DA Converters. User controlled parameters such as matrix routing, Noise Gate, up to 48dB/Oct IIR HP/LP filters for crossover, parametric EQs (Bell, Notch, Variable Q HI/LO Shelving, and HI/LO Pass filters), RMS Compressor, Peak Limiter, polarity, and alignment delay are available. All in all, everything needed to optimize loud-speaker performance is provided by the NEAR 3XL. Moreover, each input/output channel provides internal limiting process monitoring to prevent Overflow Clipping from occurring in the signal path. Efficient heat dissipation mechanisms and over-temperature protection are implemented, which ensure reliability without compromise. A useful Pink/White noise generator is included to facilitate system setup. All setup parameters for input/output DSP are easily accessible by using the remote GUI application.

3XL
DSP Power Amplifier

Panel Descriptions

**Front
Panel**
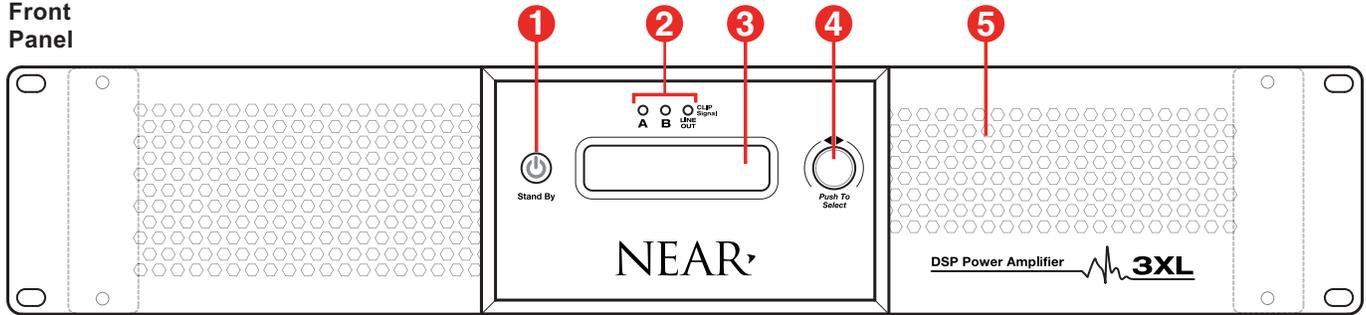
1. **"Stand By" Button -** Puts the amplifier into low-power consumption, or "Stand By" mode. The button will appear as back-lit Red when in "Stand By" mode.

2. **Signal Clip Indicators -** Summed LED read out of corresponding Input and Output.

   Green - Signal is present.
   Red - Clipping condition (detected at various points from input to DSP to amplifier out.

3. **LCD Display -** Read-out for amplifier state and preset selection.

4. **Encoder/Push Button -** Used to navigate the LCD screen and presets.

5. **Fan Air Intake -** Air intake for stepped-speed cooling fan. Fan speed responds as needed to keep the amplifier cool, while reducing dust build-up. Fan grilles are backed by dust filters. The unit may be vacuumed for cleaning via front panel.

**Rear
Panel**
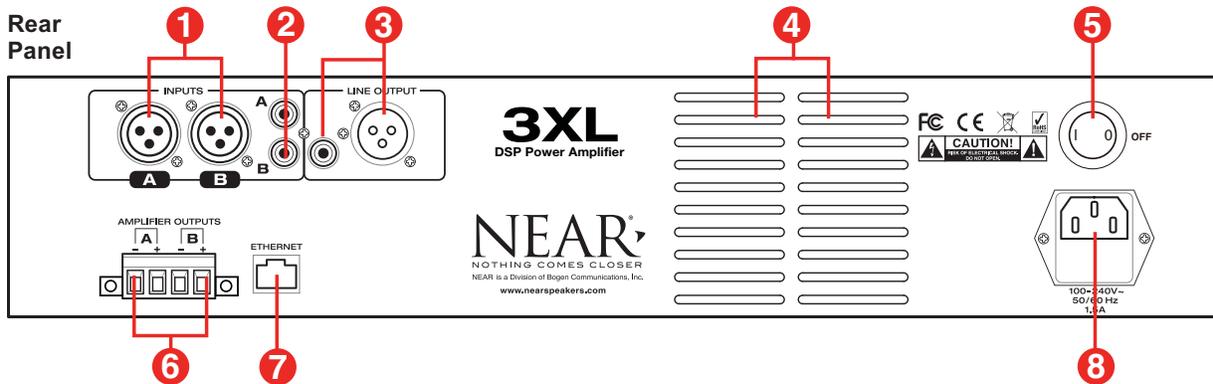
1. **High-Impedance Balanced Inputs -** XLR female connectors allow for easy installation and provide convenient connections to high-impedance balanced inputs. One per input channel.

2. **High-Impedance Unbalanced Inputs -** RCA type connectors allow for easy installation and provide convenient connections to high-impedance unbalanced inputs. One per input channel.

3. **Line Output -** Line-level output. Third DSP output is available as Line Level only, either Balanced XLR male, or Unbalanced RCA type.

4. **Fan Exhaust -** Air outlet for stepped-speed cooling fan.

5. **Power Switch -** ON/OFF Unit Power.

6. **Amplifier Output Speaker Terminals -** Pluggable screw terminals connect to speaker loads for each amplifier channel. Accepts up to #12 AWG wire.

7. **Ethernet Connection -** Ethernet RJ45 Connector for connection to MS-Windows® equipped computer to access additional DSP features via a GUI-based application.

8. **IEC Power Input -** AC mains connection and fuse.

Installation

Ventilation

The 3XL Power Amplifier was designed to either be placed on a table or rack-mounted. For rack-mounted applications, the amplifier(s) can be stacked directly one on top of the other for maximum use of the rack space available without any extra, empty rack spaces between them. An open air space of at least 4" must be provided at the front air intakes and the exhaust to ensure adequate cooling. This applies whether rack- or table-mounted. Care should also be taken to ensure that the front intake air is not considerably warmer than the ambient air temperature. Mount the amplifier low in the rack so that heat dissipation from other equipment does not warm the amplifier's intake air.

Amplifier Mounting

1. **Rack Mounting:** Rack ears are integral with the 3XL amplifier to allow mounting in 19" racks. Load the amplifier into the rack and secure it to the rack (**1 & 1A**) using 10-32 or M5*16 (or larger), Truss or Pan head type screws (not included).

2. **Table Mounting:** Rubber feet, included with the unit, must be secured to the bottom of the amplifier with the screws provided (**2 & 2A**) to allow it to be situated on a tabletop/shelf.
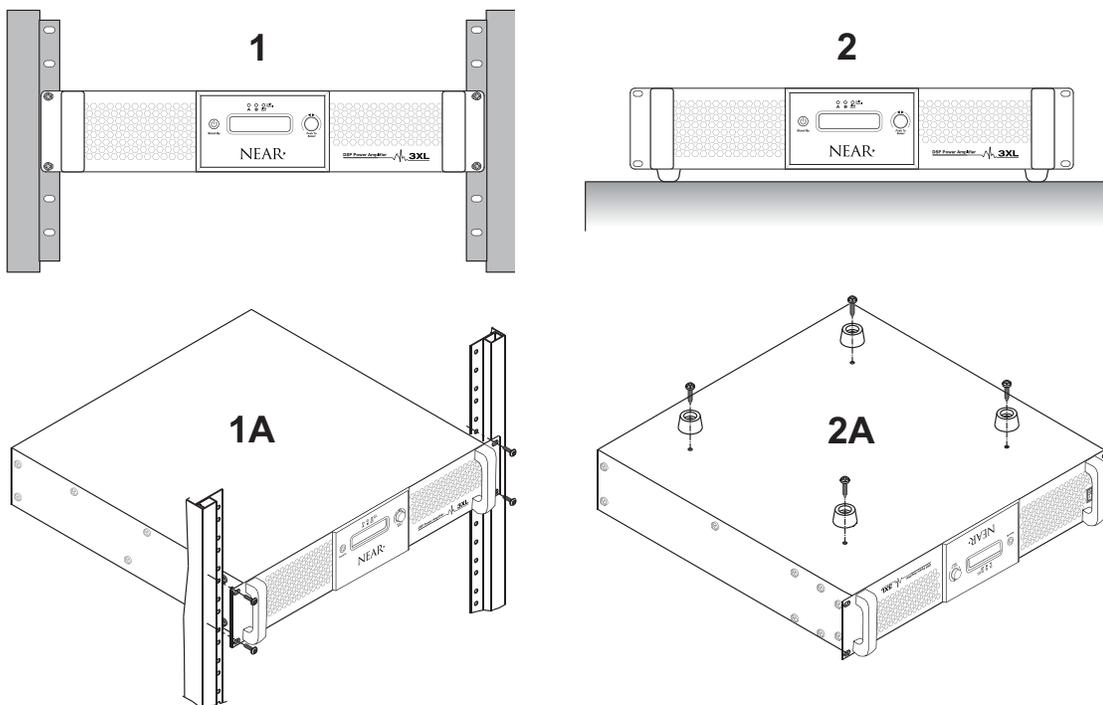
Connections

Speakers

For 70/100V and 4/8/16-ohm Speakers

The 3XL was designed to drive 70/100V constant voltage and 4/8/16-ohm type low-impedance speaker loads. The use of lower impedance speakers may cause the amplifier to engage its protection circuits and shut down or limit amplifier function.

The **Speaker Terminals** can accept up to a #12 AWG wire and are pluggable which make wiring easier. The polarity of each set of speaker outputs (A & B) is indicated with a "+" and "-" sign. Use these indicators to ensure that the polarity of the speakers is correct. Do not ground any of the output terminals. Doing so will cause the amplifier to go into protect mode, shutting down operation of the affected channel.
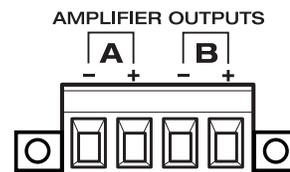
Balanced Input Connections

Balanced input connections are used when the source device provides a balanced output signal (signal "+", signal "-", and ground "G"). This type of connection is desirable when operating in electrically noisy environments, where long input cable runs are needed, or to ensure the lowest noise operation. If compatible with the source device, this type of connection is recommended. This input must be selected via the GUI application.
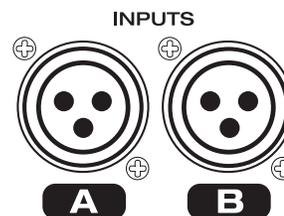
Unbalanced Input Connections

Unbalanced input connections are used when the source device provides an unbalanced output signal (signal "+" and ground "G"). Since unbalanced connections do not provide the same amount of noise immunity that a balanced connection does, the connection distances should be made as short as possible. Unbalanced Input is active by factory default.

Line Outputs

Line level output. Third DSP output is available as Line Level only, either Balanced XLR male, or Unbalanced RCA type. Both outputs are available at all times.

NOTE: In order for the Line Output Balanced XLR male to be active, be sure that the mating connector (XLR female) has a jumper between Pin1 and the shell ground tab.
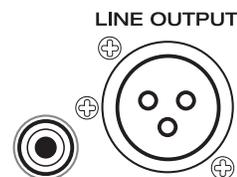
Ethernet

Ethernet RJ45 Connector for connection to MS-Windows® to access additional DSP features via a GUI-based application.

Operation

Power Switch

The Power Switch is located on the right rear of the 3XL unit. Press the "I" side of the switch to turn the unit ON. The amplifier will begin its power-up process once turned on.
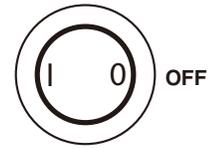
Front LED Indicators

The front of the 3XL contains 3 LED indicators, one per output channel:

CLIP – Illuminates Red, it indicates a condition in which the signal is clipping an output stage and automatically reducing signal level to prevent the overload condition.

SIGNAL – Illuminates Green, it indicates that the output is passing signal normally.

NOTE: By factory default, A and B also monitor Signal/Clip of InA and InB input stages.

Encoder/Push Button

This is used to navigate and select through the presets. Push once to access security level. Rotate to password **"val = 10"**. Push again to access IP address and preset selection. Rotate again to select desirable preset. Once desired preset is shown, push again to select preset. Amplifier will now operate with selected preset.

NOTE: A Factory Restore can be accomplished by pushing and holding-in the Encoder/Push Button while simultaneously pressing the Power Switch ON. This will clear all user settings/presets and restore the unit to its factory defaults.

Stand By Button

Puts the amplifier into low-power consumption, or "Stand By", mode. The button will appear as back-lit Red when in the "Stand By" mode. Press for >2 Sec to enter and exit Stand-By Mode.

LCD Display

Readout for amplifier state and preset selection.
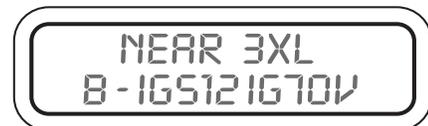
Quick-Start : Using DSP Presets

The NEAR 3XL DSP Amplifier can store up to 16 preset DSP configurations for equalization, crossovers, limiting and other parameters. There are up to 16 configuration presets stored in the 3XL's database that correspond to popular NEAR speaker combinations. NEAR changes the presets loaded on amplifiers from time-to-time to account for new speaker models. Look for a supplemental presets chart in the product carton to see which presets are loaded on your specific unit. If there is no chart go to *www.bogen.com* and use your unit's serial number to find the presets stored on your amplifier. You can also find the list of pre-loaded presets by accessing the **STORE** function in the NEAR DSP graphical user interface (GUI); see Software Control on page 9 for instructions.

If the speaker combination you are installing does not appear in the provided 3XL presets table, go to: *http://www.bogen.com* to see if a preset file exists for that system. If it does, you can download the file and store it in one of the preset slots by using the **LOAD** function in the GUI (see page 11). New configurations and updates to existing config-urations will be added to the NEAR webpage periodically.

If you create a custom DSP configuration it can be saved in any preset slot, 1 through 16, by over-writing an unneeded factory-loaded configuration. See page 11 for more information.

NEAR 3XL Front Panel
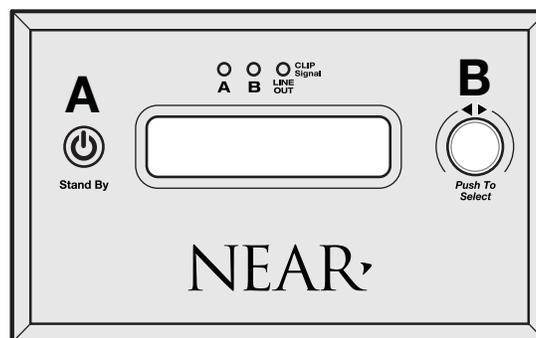
1.) If **Stand By Button** (A) appears back-lit RED, push and hold for 2-sec to exit.

2.) The **Program Button** (B) is used to navigate and select through the presets. Push once to access security level. Rotate to **password "val = 10"**. Push again to access IP address and preset selection. Rotate again to select the appropriate preset. Once the desired preset is shown, push again to select that preset. Amplifier will now operate with the selected preset.

Quick-Start : Wiring

Choose your system type, either STEREO 2-CHANNEL or SUMMED MONO
(Channel A: Subwoofers; Channel B: Satellites).
Wire the speakers according to your selected system plan.

STEREO 2-CHANNEL

DETAIL

AMPLIFIER OUTPUTS

SUMMED MONO

CH A - Subwoofer(s) / CH B - Satellites

DETAIL

AMPLIFIER OUTPUTS
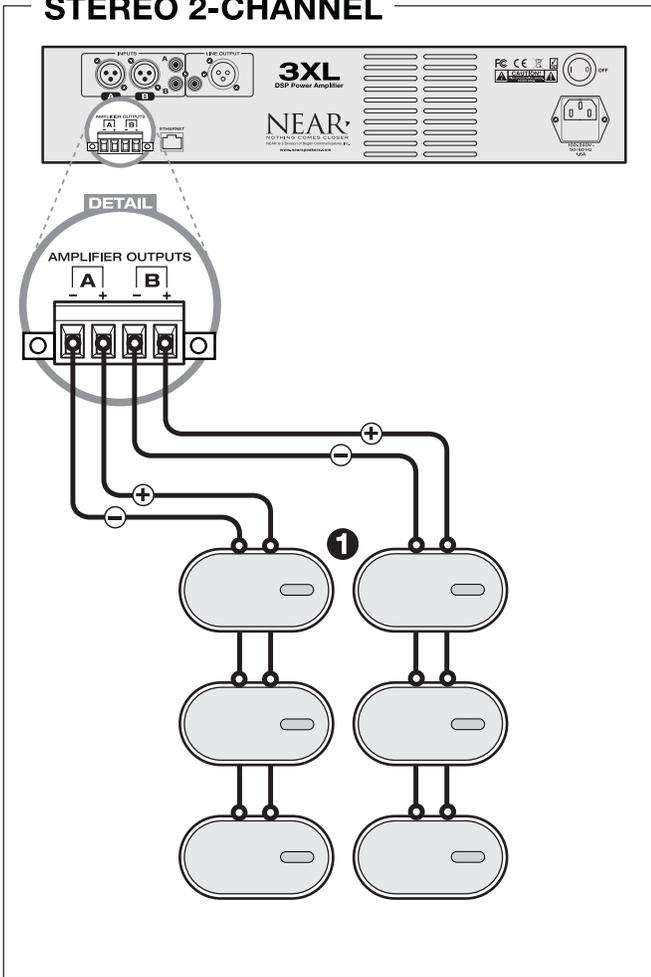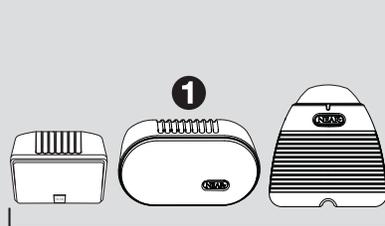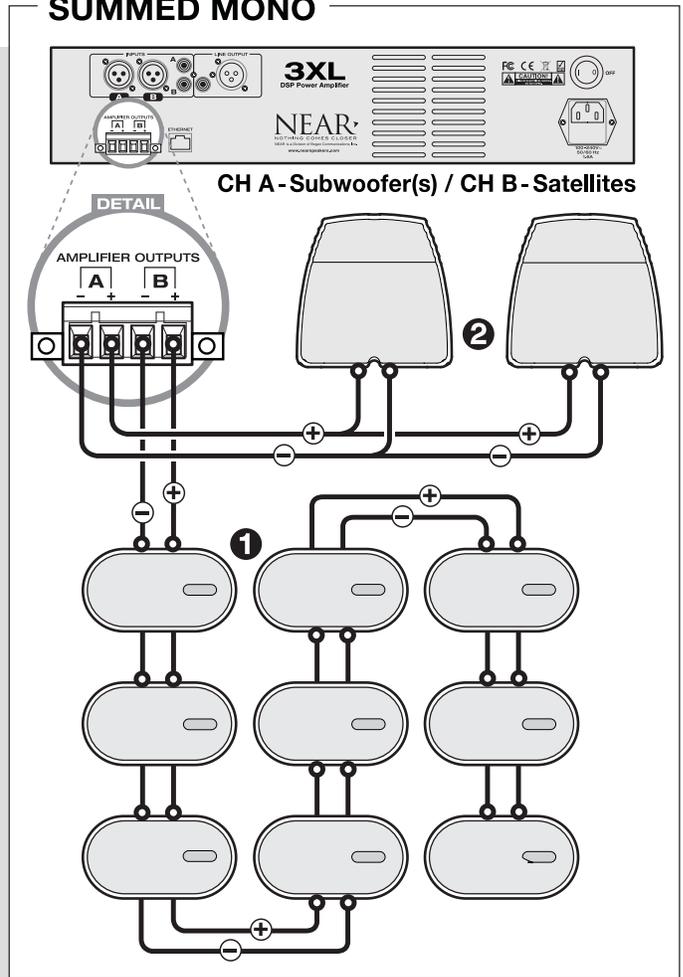
NEAR VM-Series, LB-Series,
& IG-Series Loudspeakers
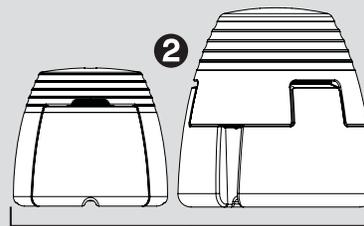
NEAR IGS-Series
Subwoofers

Software Control

Graphical User Interface Control

A MS-Windows® (PC) graphical user interface (GUI) application is available for setting-up the parameters of all the available processes of the NEAR 3XL. This application can be downloaded from the NEAR website at: *www.bogen.com*. Look for the link under **Resources** on the right side of the webpage. This will take you to the XL Series Amplifier GUI and DSP Preset Files page where you can download the **USER INTERFACE SOFTWARE**.

Once downloaded, find the set-up (.exe) file in your download folder and double click. Follow the prompts to install the NEAR GUI app to your Windows PC.

Connecting the PC to the Amplifier

The GUI operates through an Ethernet connection with the fixed IP address for the amplifier: **192.168.000.101**. Take the following steps to set up the Ethernet connection between the amplifier and your PC:

1. Connect your PC to the amplifier's Ethernet port with CAT-5 cable.
2. Make sure the amplifier is "ON". Open the Control Center from your Windows Start menu.
3. Select "Networking and Sharing Center" In the dialog box click on "Change Adaptor Settings".
4. Double click the active Ethernet connection.
5. If your Ethernet port has been previously configured to connect to an office network, click "Details" and copy the network settings to a word processing document so you can reset back to your normal configuration later. If it has not been configured go right to step 6.
6. Scroll down the list until you see "Internet Protocol Version 4 (TCP/IPv4)," double click it or select "Properties".
7. Select "Use the following IP address:" and enter these values:
   IP address: 192.168.0.5 (If the GUI fails to connect to the amplifier (see page 9), return to this step and change the last digit of the IP address from 5 to some other number, up to the value 10, to correct the IP conflict.)
   Subnet mask: 255.255.255.0
   Default gateway: 192.168.0.1
8. Click "OK"

For an illustrated version of the Ethernet connection procedure go to:
www.bogen.com.

For video tutorials go to: *www.bogen.com*

Software Control

Once the PC is connected to the amplifier using the Ethernet cable, launch the GUI application and the following **Main Window** will appear.

Click the **Connect** pull down on the upper left corner of the window, click the Connect tab to open the Select Port window:
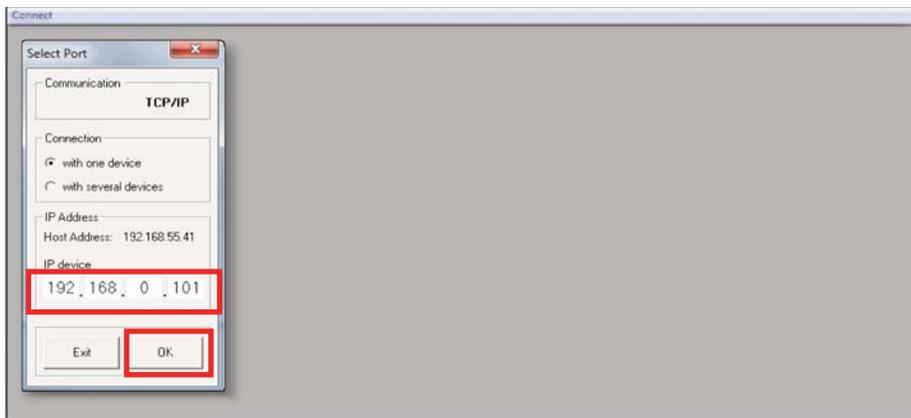
Enter the **Amplifier's IP Address** (**192.168.000.101** for the 3XL) into the Select Port window and click **OK**; the GUI will then connect.

If the PC does not connect with the amplifier and prompts you to open in the demo mode, follow these steps:

1. Select **CONNECT** as instructed above and click the "**with several devices**" radio button in the Select Port dialog box.

2. In the **FROM** field enter: **192.168.0.0**; In the **TO** field enter: **192.168.0.254**

3. Click **OK**. (If the connection fails, go back to step 7 on page 8 and change the last digit of the IP address from 5 to some other number from 1 to 10. Change the number as many times as needed to resolve the IP conflict.)

Software Control

After the connection takes place, you will see the **IP List** window appear. Double-click on the **IP Address/Device** shown in the **IP List.**
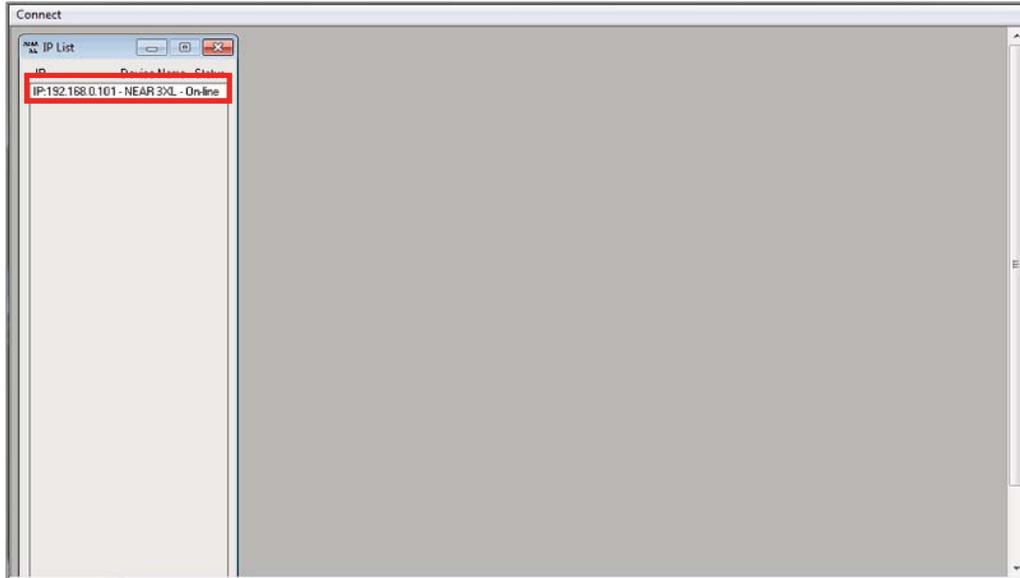
If in **Standby Mode,** the amplifier will show the following screen:

To Exit **Standby Mode**, press the red **On/Off Button** located in the upper right corner of the window. This will bring you directly to the **Home/Level** window.

Software Control

Home/Level window.
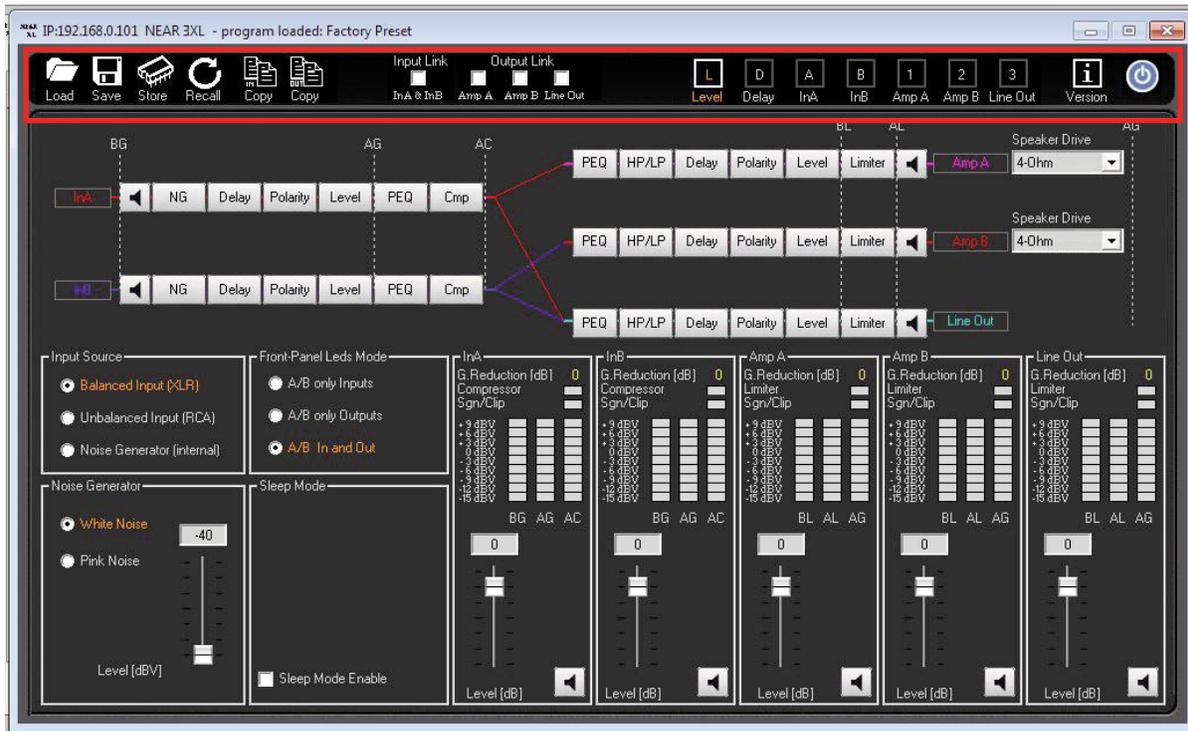
From the **Home/Level** window the following **Tool Bar** actions can be taken:

1. **Load:** Allows you to load into the GUI a DSP preset file or custom DSP scheme that had been previously stored on your PC.

2. **Save:** Allows you to store the current DSP scheme or preset to your PC.
   Note: You can select a folder for saving and assign a name to the preset.

3. **Store:** Allows you to upload the current preset or custom DSP scheme to the amplifier's data-base of DSP presets. The preset can be stored in any one of 16 positions and a preset name can be assigned. Once a preset is stored within one of the 16 available locations, it will be accessible via the amplifier front panel and its name will be displayed on the LCD screen.

4. **Recall:** Opens a window that displays the 16 presets stored in the amplifier. Select any one from the list to load it as the current active preset.

5. **Copy (IN):** Allows you to copy all the parameters of one input channel to the other one.

6. **Copy (OUT):** Allows you to copy all the parameters of one output channel to another one.

7. **Input Link:** Gives the user the option to LINK together the 2 input channels. When the 2 channels are linked, actions performed on one channel will be reflected on the other.

8. **Output Link:** Gives the user the option to LINK together any of the output channels. When the channels are linked, actions performed on one channel will be reflected on the other(s).

9. **L/D/A/B/1/2/3 Buttons:** Clicking on these buttons will allow the opening of the specified DSP processing windows, allowing further feature adjustments.

10. **Version:** Provides revision level for Software, Firmware, and DSP.

11. **Stand By Mode:** Puts the amplifier into low-power energy consumption mode. This button mimics the same function as the Front Panel "Stand-By" button.

Software Control

WARNING:

The DSP controls described below confer enormous control and power on the user. In the hands of an experienced technician, the signal processors can greatly improve the sound quality and reliability of the system. In inexperienced hands, the DSP can cause more harm than good. If you are unfamiliar with any of the functions described in this manual your best course of action is to leave them alone.

Be especially careful with Equalization (EQ). Boosts of more than a few dB can sap the amplifier's power and potentially damage the loudspeakers. Two or three dB of boost is usually enough to correct for audible problems. Do not obsess over achieving ruler flat measured response, let your ears be the ultimate judge.

From the **Home/Level** window the following **Configuration Settings** are available:
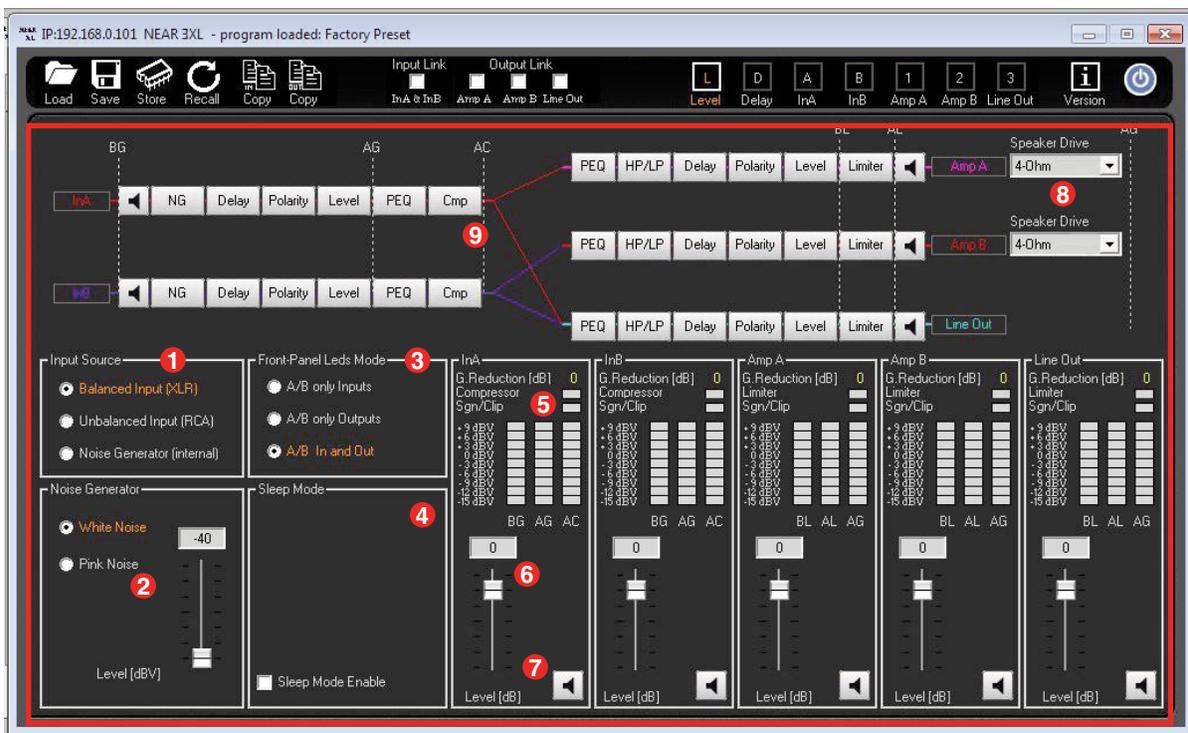
1. **Input Source:** Either of the following three options can be selected as the active input for the InA and InB input channel sources:
   Balanced Input: Input is coming from rear panel balanced XLR connectors.
   Unbalanced Input: Input is coming from rear panel unbalanced RCA connectors.
   Noise Generator: Input coming from the internal Noise Generator. Further options are accessible in the "Noise Generator" section.

2. **Noise Generator:** Allows selection of White or Pink noise. The Level slider is used to adjust the Noise Level at the inputs, with a range from -40dBV to 0dBV.

3. **Front Panel LEDs Mode:** Select what the front panel A and B LEDs display:
   Inputs only: Displays signal and clip for InA and InB only.
   Outputs only: Displays signal and clip for Amp A and Amp B only.
   Input and Output: Displays the signal and clip for both In/Amp A and In/Amp B.
   Note: Line Output LED always displays signal and clip of Line Output only.

4. **Sleep Mode:** Enable/Disable sleep mode feature. When enabled, allows amplifier to enter a low-power consumption mute state after a 3-minute period of no audio input. Normal power and un-muting is instantaneous after input audio is detected.

5. **VU Meters:** VU Meters indicate the Input/Output Levels from -15dBV up to +9dBV at different tap points along the signal stage. Specifically for the Inputs, BG (Before Gain), AG (After Gain), and AC (After Compressor), and for the Outputs, AG (After Gain), BL (Before Limiter), AL (After Limiter).

6. **Input/Output Level Sliders:** Allows adjustment to the Input/Output Levels, ranging from -60dBV up to +12dBV.

7. **Mute Button:** Allows Muting of the related Input/Output channels.

8. **Speaker Drive Selectors:** on the Amplifier Output channels it is possible, independently, to define the load type the channel has to drive.
   100V – with this selection, the amplifier can Direct Drive 100V Constant Voltage line.
   70V – with this selection, the amplifier can Direct Drive 70V Constant Voltage line.
   16 Ohm – with this selection, the amplifier can drive 16 Ohm Loads.
   8 Ohm – with this selection, the amplifier can drive 8 Ohm Loads.
   4 Ohm – with this selection, the amplifier can drive 4 Ohm Loads.

9. **Block Diagram:** Shows the sequence of the Input and Output processes. Clicking on the desired Input/Output process block, will link directly to the page containing the selected process. Clicking on the "loudspeakers icons" on the block diagram Mutes the Input/Output channel.

DELAY Editing Page window.
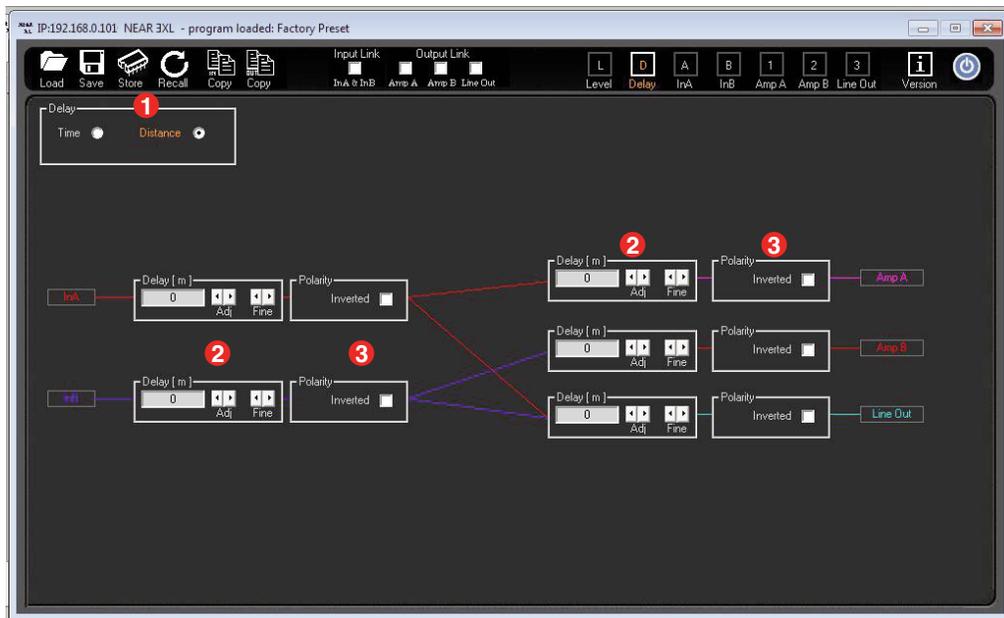
1. **Delay:** The delay can be expressed in Time or Distance: Milliseconds [ms] or Meters [m].

2. **Delay[ms/m]:** Desired Delay to the Input and Output paths can be entered manually, or the delay can be adjusted via arrow buttons (Max Delay per channel is 961ms or 326m):
   Adj: the delay can be adjusted by minimum steps of 1 ms or 0.34 meters
   Fine: the delay can be adjusted by minimum steps of 22us or 6.8mm

3. **Polarity:** this allows the polarity of each input/output to be inverted by 180˚.

WARNING:

If you feel the need to reverse polarity to correct for a reversed polarity wiring error, or to check for the best subwoofer to satellite blending, we strongly recommend reversing polarity on the output stage only, and to avoid reversing polarity on the input stage.

Software Control

InA/InB Editing window.
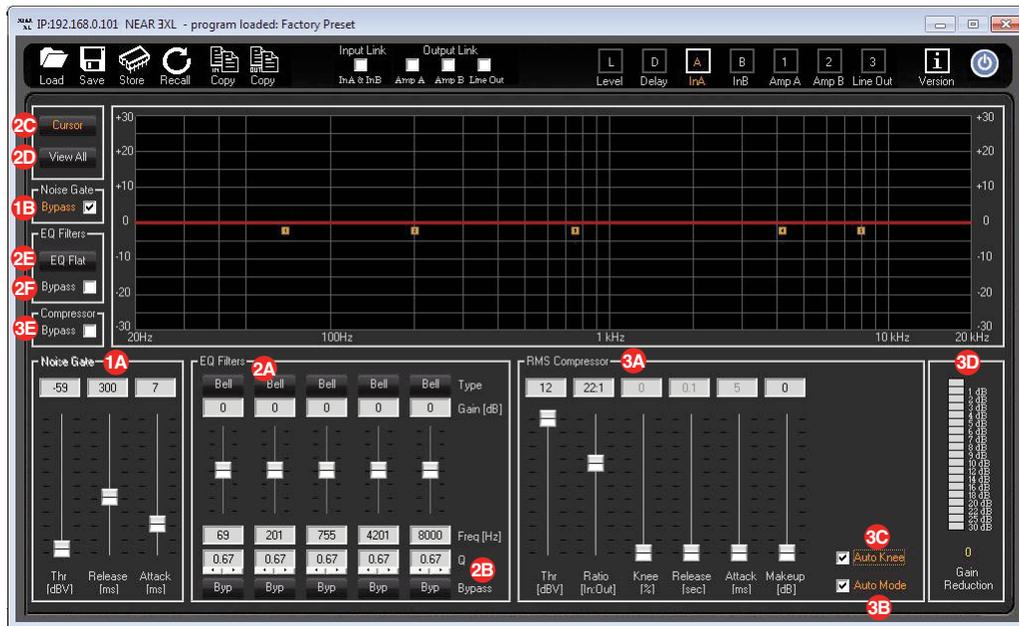
1. **Noise Gate:** Allows Noise Gate, when necessary, to improve the noise floor of an input source.

    1A. Thr – Sets threshold where Noise Gate starts to mute input signal; range from -60 to -20 dBV.

    Release – Sets the time used by the Noise Gate to unmute the signal once the Threshold is exceeded; range is from 10ms up to 1sec.

    Attack – Sets time used by the Noise Gate to mute the input signal once under the Threshold; its range is from 1ms up to 1sec.

    1B. Bypass – Check box used to bypass/disable the Noise Gate feature.

2. **EQ Filters:** 5 bands of selectable parametric EQ. The following filter types are available:

    2A. Bell – Peak type filters, with adjustable Center Frequency (20 to 20k Hz), Bandwidth (0.4 to 128 Q), and Gain (-15 to +15 dBV).

    Hi/Lo Shelving – Variable Shelving filters with adjustable Center Frequency (20 to 20k Hz), Bandwidth (0.1 to 5.1 Q), and Gain (-15 to +15 dBV).

    Hi/Lo Pass – Variable Hi and Lo Pass filters with adjustable Center Frequency (20 to 20k Hz), and Bandwidth (0.1 to 5.1 Q).

    Notch – Variable Notch Filters with adjustable Center Frequency (20 to 20k Hz), and Bandwidth (4 to 104 Q).

    2B. Byp – Bypass for each particular Filter.

    2C. Cursor – Pressing Cursor button turns on the drag and drop EQ points on the graphical view.

    2D. View All - View All opens EQ graphical showing the combined EQ of all Inputs/Outputs.

    2E. EQ Flat – Pressing the EQ Flat button resets all filter Gains (only) to zero.

    2F. Bypass - Check box used to bypass all 5 bands EQ Filters.

3. **RMS Compressor**: An RMS compressor is available on the Inputs. It can be used to reduce the dynamic range of input sources. The following parameters are available:

    3A. Thr – Threshold where compression starts, ranging from -18dBV up to +12dBV

    Ratio – Amount of applied compression, ranging from a 2:1 to 32:1 ratio.

    Knee – Gain reduction shape around Threshold, ranging from 0 to 100 % (HARD to SOFT).

    Release – Time to stop compression, once below threshold, ranging from 100ms up to 3 Sec.

    Attack - Time to start compression, once above threshold, ranging from 5ms up to 200ms.

    Makeup – Post gain added to compressed signal, ranging from 0 to +12dBV.

    3B. Auto Mode – Check box used to activate Auto Mode, which allows RMS compressor to automatically and dynamically set the Attack/Release times based on the dynamic characteristics of the musical program.

    3C. Auto Knee – Check box activating Auto Knee allowing to set the "Knee" parameter to automatically and dynamically adjust based on the dynamic characteristics of the musical program.

    3D. Gain Reduction Meter - Displays the gain reduction due to RMS Compressor.

    3E. Bypass - Check box used to bypass the RMS Compressor feature.

Software Control

InA/InB Editing window: **Cursor** (detail).
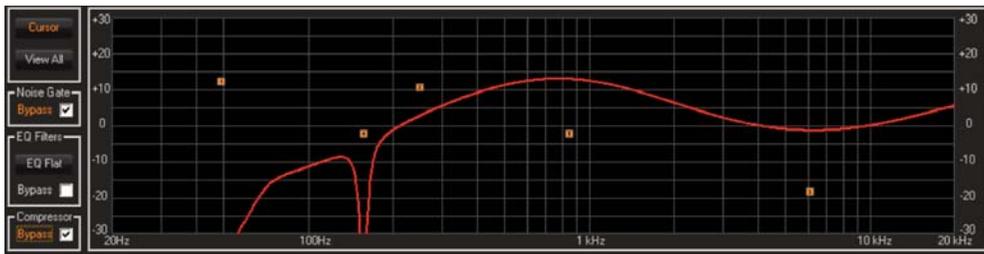
Cursor: The **InA/InB Editing** window also displays a graphic of the active EQ filters. By turning ON the "Cursor" feature, the Center Frequency and Gain can be adjusted by "dragging" the EQ cursor point with the mouse pointer.

View All window.
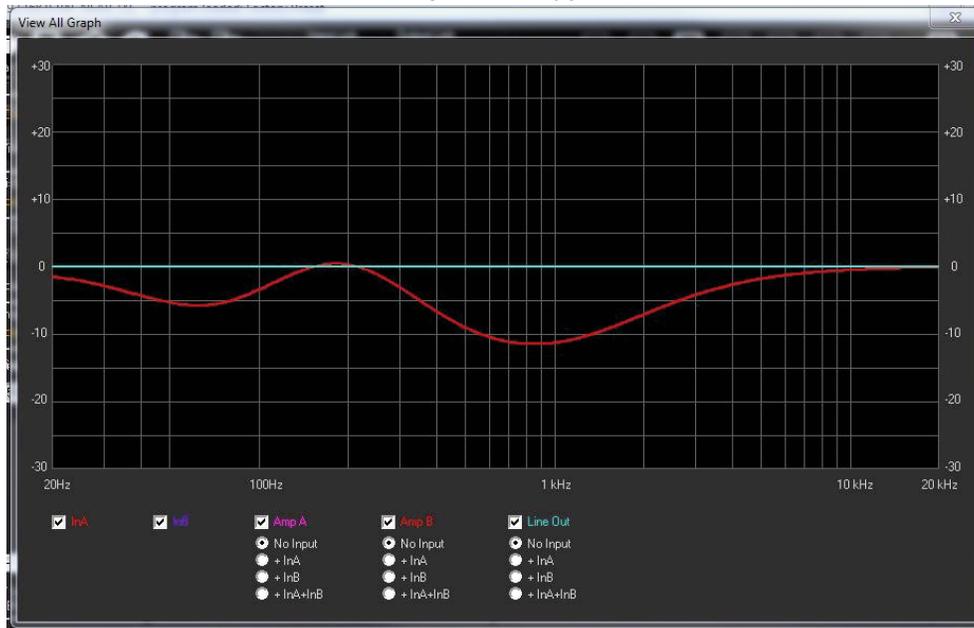
The **View All** window can be opened pressing the "View All' button. This allows the user to view all Input and Output response graphics. In addition, the Output response can be shown with and without the effects of Routed Input response.

Software Control

AmpA/AmpB/Line Out Editing Page window.
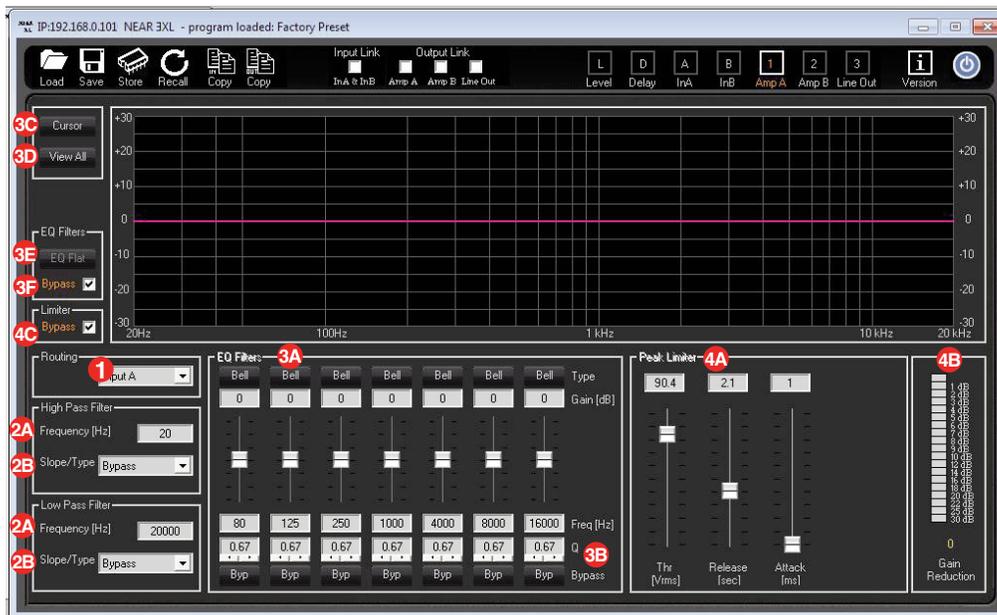
1. **Routing:** Matrix Input source selection for specific Output channel. Can be InA, InB, or InA+InB.

2. **High and Low Pass Filter:** Selection of High Pass and Low Pass crossover Filters on each Output channel.
   2A. Frequency: The center frequency for all filter types range from 20 – 20kHz.
   2B. Slope/Type: Available filter Types and Slopes are as follows:
   Butterworth - 6, 12, 18, 24, 36, 48 dB/Oct
   Linkwitz Riley - 12, 24, 36, 48 dB/Oct
   Bessel - 12, 24 dB/Oct
   By-Pass - Allows bypass of HP/LP filters.

3. **EQ Filters:** 7 bands of selectable parametric EQ. The following filter types are available:
   3A. Bell – Peak type filters, with adjustable Center Frequency (20 to 20kHz), Bandwidth (0.4 to 128 Q), and Gain (-15 to +15 dBV).
   Hi/Lo Shelving – Variable Shelving filters with adjustable Center Frequency (20 to 20kHz), Bandwidth (0.1 to 5.1 Q), and Gain (-15 to +15 dBV).
   Hi/Lo Pass – Variable Hi and Lo Pass filters with adjustable Center Frequency (20 to 20kHz), and Bandwidth (0.1 to 5.1 Q).
   Notch – Variable Notch Filters with adjustable Center Frequency (20 to 20kHz), and Bandwidth (4 to 104 Q).
   3B. Byp – Bypass for each particular Filter.
   3C. Cursor – Pressing the Cursor button turns on the drag and drop EQ points on the graphical view.
   3D. View All - View All opens the EQ graphical showing the combined EQ of all Inputs/Outputs.
   3E. EQ Flat – Pressing the EQ Flat button resets all filter Gains (only) to zero.
   3F. Bypass - Check box allowing to bypass all 7 bands EQ Filters.

4. **Peak Limiter:** a Peak Limiter is available on the Outputs. It can be used to limit the maximum output voltage. The following parameters are available:
   4A. Thr – Peak Limiter Threshold, ranging from 6 to 90.4 Vrms for AmpA/B and -18 to 12 dBV for Line Output.
   Release – Time to stop limiting, once below threshold, ranging from 100ms up to 5Sec.
   Attack – Time to start limiting, once above threshold, ranging from 1ms up to 900ms.
   4B. Gain Reduction – Displays the gain reduction due to Peak Limiter.
   4C. Bypass – Check box allowing to bypass the Peak Limiter feature.

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PROBLEM	CONDITION	CAUSE
UNIT OR LCD SCREEN APPEARS DEAD	**No Front Status LED or LCD Screen**	• Power Switch is OFF • REPLACE: AC Mains Fuse opened • Amplifier not plugged in • AC Outlet dead
NO SOUND	**Signal LED's Off. LCD displays current preset.**	• Correct input not selected (XLR or RCA) • No signal from Source • Input not set or wired properly
	Signal LED is GREEN. Clip LED is Off. LCD displays current preset.	• Poor/broken speaker wiring • Defective speakers • DSP routing not set correctly
DISTORTED SOUND	**Signal LED is GREEN. Limit LED is Off.**	• Input signal level too high • Poor speaker connections • Poor signal connections
	Signal LED is GREEN. Limit LED is RED (On or flashing).	• Speaker transformers saturating at low-frequencies, High Pass Filter OFF, need additional High-Pass Filtering • Below Minimum Load Rating on Output • Exceeding Maximum Power Output Rating
INTERMITTENT OPERATION	**Clip LED is RED.**	• DC Level at Signal Input • Load impedance too low • Amplifier speaker output is short-circuited • Amplifier too hot (Check for proper ventilation clearances)

NOISE/HUM	**Signal LED is GREEN.**	• Poor electrical connections at Input
		• Input cable routed near AC cables, power transformer, or other EMI radiating devices
		• Electrically noisy devices operating on the same AC circuit
		• Poor equipment grounding
		    - Ensure that all AC Safety Grounds are connected
		    - Make sure that all components in audio chain are tied to the same Ground

Specifications

3XL
DSP Power Amplifier

Number of Channels……………………………………………………....…….. 2

Dynamic Power (6dB Crest Factor)……………................................ 2 x 350W

Input Sensitivity……………………………………………………………….....1V

Output Circuitry……………………………………………………………. Class D

Output Types…………..…...4/8/16-ohm, 70V, 100V

THD @ Rated power 4 ohms (1kHz)…...................... 0.02% (1W), 0.05% (60W),
0.08% (100W)

S/N Ratio (20K BW)………….. 104dB ref. 70V, full power

Frequency Response…………………........................ .20Hz – 20kHz , -1.5dB
(1W, 4 ohm to 8 ohm load)

Damping Factor…………………........................ >120 (4 ohms/1kHz input signal)

Power Supply....……........................... Switched-Mode power supply with PFC
(Power Factor Correction**)**

Operating Range………………….........…….......100-240 VAC (50Hz/60Hz), 1.5A

Consumption @ 120VAC….....................................Idle: 22W/0.266A/73 BTU/hr
(based on full power per channel 350W@8ohms)
Standby: 9.6W/0.14A/32 BTU/hr
Full Power: 906W/7.6A/703.5 BTU/hr

Protections………………...….................. Clip, Over-Current, Over/Under Voltage,
Output DC and Over-Temperature

Analog Input…................. 2 x XLR electronically balanced, 2 x RCA Unbalanced

Analog Output…....................................... 2 x pluggable terminal amplifier BTL,
1 x XLR electronically balanced, 1 x RCA unbalanced

GUI Application…................................Windows XP® or later, 512MB RAM min.

GENERAL
Dimensions……………………………….....................19” W x 3.5” H x 15-1/2” D
(483mm x 89mm x 394mm) - 2RU

Weight, Net/Shipping………………...........17.7 lbs.(8.06 Kg) / 24.18 lbs.(11 Kg)

ACCESSORIES
AC Power Line Cord……..…................................UK version (P/N: ACLCUK)
BS 546 to IEC-320-C13 plug connectors; 1.5m length
……….…................................EU version (P/N: ACLCEU)
CEE 7/7 to IEC-320-C13 plug connectors; 1.5m length

Warranty

Limited Warranty; Exclusion of Certain Damages

The **NEAR® 3XL Power Amplifier** is warranted to be free from defects in material and workmanship for 3 (three) years from the date of sale to the original purchaser. Any part of any NEAR product covered by this warranty that, with normal installation and use, becomes defective (as confirmed by Bogen upon inspection) during the applicable warranty period, will be repaired or replaced by Bogen, at Bogen's option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 4570 Shelby Air Drive, Suite 11, Memphis, TN 38118 USA. Repaired or replacement product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR NEAR PRODUCTS. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HERE-BY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of NEAR products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. **IN NO EVENT SHALL BOGEN BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, LOSS OF DATA OR LOSS OF USE DAMAGES) ARISING OUT OF THE MANUFACTURE, SALE OR SUPPLYING OF NEAR PROD-UCTS, EVEN IF BOGEN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES.** Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

NEAR products that are out of warranty will also be repaired by the Bogen Factory Service Department -- same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number. For most efficient warranty or repair service, please include a description of the failure.

NEAR Products manufactured and labeled by other companies may be covered by warranties offered by such companies. Please call Bogen Customer Service or refer to product packaging for manufac-turer's warranty for non-NEAR branded products.

11/2014

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