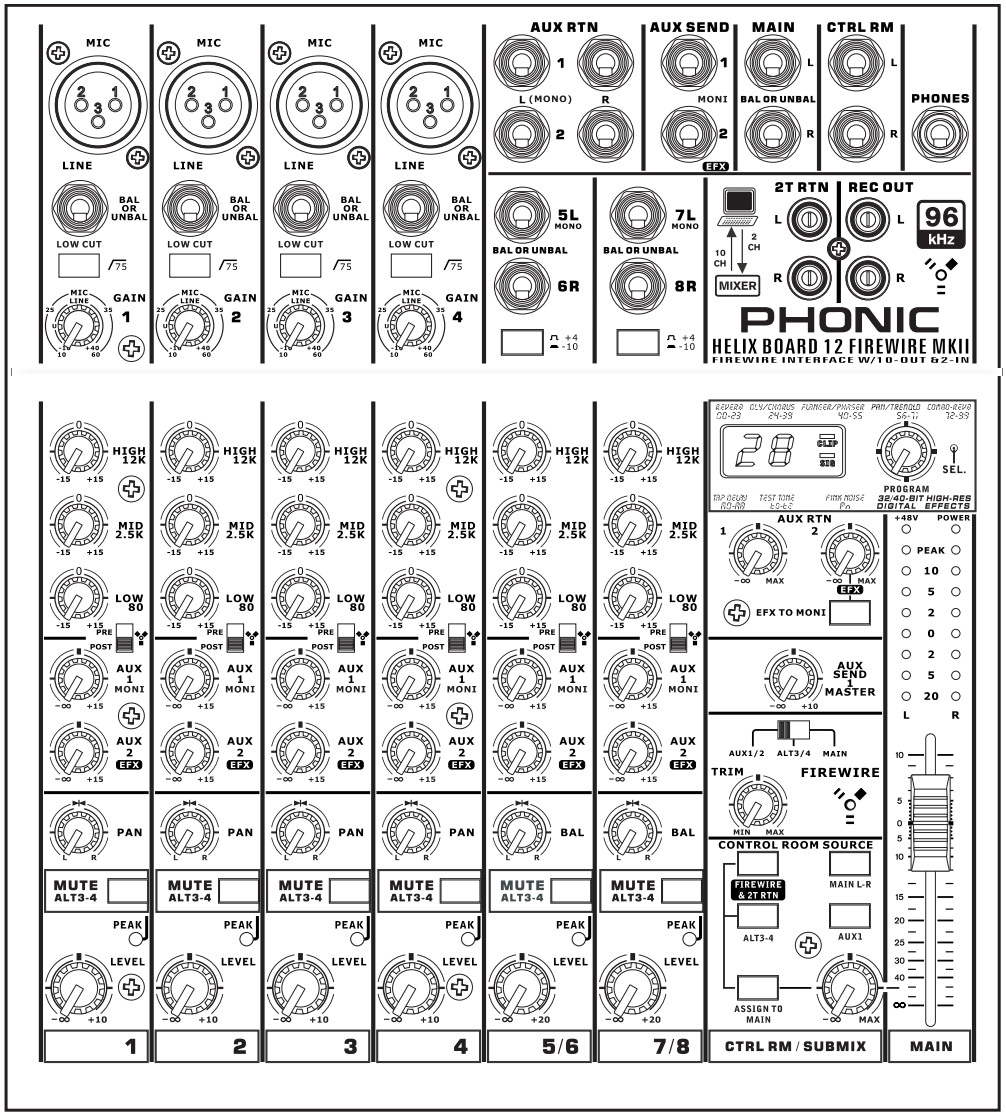
PHONIC

HELIX BOARD 12 FIREWIRE MKII

FireWire-enabled Mixing Console



English

User's Manual

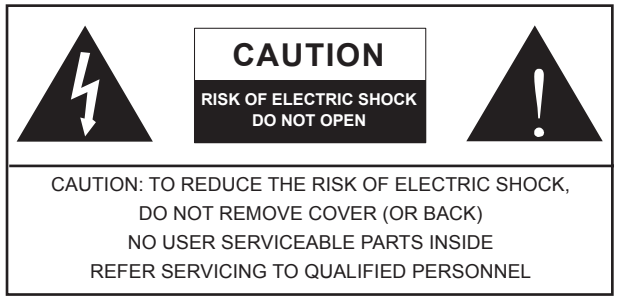
IMPORTANT SAFETY INSTRUCTIONS

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. The MAINS plug is used as the disconnect device, the disconnect device shall remain readily operable.

Warning: the user shall not place this apparatus in the confined area during the operation so that the mains switch can be easily accessible.

1. Read these instructions before operating this apparatus.
2. Keep these instructions for future reference.
3. Heed all warnings to ensure safe operation.
4. Follow all instructions provided in this document.
5. Do not use this apparatus near water or in locations where condensation may occur.
6. Clean only with dry cloth. Do not use aerosol or liquid cleaners. Unplug this apparatus before cleaning.
7. Do not block any of the 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 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 is 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 plug, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with a 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 lighting 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.



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 in the literature accompanying the appliance.

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

CAUTION: Use of controls or adjustments or performance of procedures other than those specified may result in hazardous radiation exposure.

HELIX BOARD 12 FIREWIRE MKII

FireWire-enabled Mixing Console

USER'S MANUAL

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V1.0 SEP 6th,2006

INTRODUCTION

Thank you for purchasing the Helix Board 12 FireWire MKII, one of Phonic's newest mixers that sounds great and works hard both in and out of the studio. The mixer features a FireWire interface that can stream up to 10 independent channels of audio to the computer and return two tracks for monitoring, all at screaming fast transfer rates of up to 24-bit/96 kHz. An onboard 40-bit digital multi-effect processor provides 100 popular programs plus tap delay, test-tones and foot switch jacks.

There are 4 extremely low noise Mic preamps, each with phantom power, spread across four mono channels and two stereo channels, each featuring a 3-band EQ. Additional features include two AUX sends, two stereo AUX returns, an extra ALT 3-4 stereo mixing bus, Steinberg Cubase LE workstation software and an optional rack mounting kit.

We know how eager you are to get started – wanting to get the mixer out and hook it up to your computer is probably your number one priority right now – but before you do, we strongly urge you to take a look through this manual. Inside, you will find important instructions and warnings on the set up, use and applications of your brand new mixer. If you do happen to be one of the many people who flatly refuse to read user manuals, then we just urge you to at least glance at the Instant Setup section. After glancing at or reading through the manual (we applaud you if you do read the manual in its entirety), please store it in a place that is easy for you to find, because chances are there's something you missed the first time around.

FEATURES

- 12-input small-format analog mixer with extremely low noise circuitry
- 40-bit digital multi-effect processor with 100 programs plus tap delay and foot switch jacks
- 96 kHz FireWire interface for streaming 10 independent channels of audio to computer with near-zero latency
- Pre/post switch for swapping streaming input channels to computer from pre low cut, EQ to post EQ, post channel fader.
- Two channels of monitoring from computer via FireWire interface
- Four mono Mic/Line channels
- Two stereo channels, two stereo AUX Returns, two AUX Sends
- 3-band EQ on each channel
- 75 Hz low-cut filter on mono channel
- Inserts on channel 1 & 2
- +48V phantom power on Mic channels
- Stereo AUX Send 1 cue for monitoring individual channel
- Master AUX section with EFX to Monitor
- Extra ALT 3-4 stereo bus
- Control room/Phones source matrix
- Balanced master output with 60 mm fader control
- High-volume headphone output
- Compatible with Mac OS X and Windows XP
- Steinberg Cubase LE workstation software included

PACKAGE INCLUDES

1 x Helix Board 12 FireWire MKII mixer

1 x FireWire cable

1 x CD-ROM with ASIO & WDM drivers

1 x CD-ROM with Steinberg Cubase LE

1 x Power supply and cable

Optional: ER-12MUX rack mounting kit

If any items are missing from your package, please contact your nearest Phonic dealer.

GETTING STARTED

1. Ensure all power is turned off on your mixer. To totally ensure this, the power adapter should not be connected to the unit.
2. All faders and level controls should be set at the lowest level and all channels muted to ensure no sound is inadvertently sent through the outputs when the device is switched on. All levels can be altered to acceptable degrees after the device is turned on using the channel setup instructions.
3. Plug any necessary equipment into the device's various inputs and outputs. This could include amplifiers and speakers, monitors, signal processors, recording devices, guitars, keyboards, microphones, and so on.
4. Plug the supplied power adapter into the power inlet on the back of the device and then into a power outlet of a suitable voltage.
5. Turn the power switch on and follow the channel setup instructions to get the most out of your equipment.

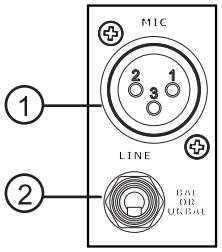
CHANNEL SETUP

1. To ensure the correct audio level of the input channel is selected, each of the level input controls of the Mixer should be turned counter-clockwise or down as far as they will go and the mute buttons should all be engaged.
2. No input other than the one being set should have any device plugged in. This will ensure the purest signal is used when setting channels.
3. Adjust the LEVEL and AUX 1 volume controls of the channel you are setting to around the 2 o'clock mark. Also set the Main L-R fader to the 0 dB mark.
4. Press the AUX 1 button on the Control Room Source section down (making sure all others are released), allowing the level meter to display the level of the channel being set.
5. Ensure the channel has a signal sent to it similar to the signal that will be sent when in common use. For example, if the channel is using a microphone, then you should speak or sing at the same level the performer normally would during a performance; if a guitar is plugged into the channel, then the guitar should also be strummed as it normally would be (and so on). This ensures levels are completely accurate and avoids having to reset them later.
6. Set the channel's gain so that the Level Meter indicates the audio level is around 0 dB, ensuring the level never reaches +5 dB.
7. This channel is now ready to be used; you can stop making the audio signal.
8. You can now select another channel and repeat the same process.

MAKING CONNECTIONS

Inputs and Outputs

1. XLR Microphone Jacks



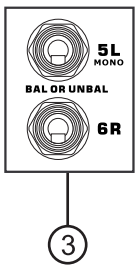
These jacks accept typical 3-pin XLR inputs for balanced and unbalanced signals. They can be used in conjunction with microphones – such as professional condenser, dynamic or ribbon microphones - with standard XLR male connectors, and feature low noise preamplifiers, serving for crystal clear sound replication. The Helix Board 12 FireWire MKII mixers feature a total of four standard XLR microphone inputs.

NB. When these inputs are used with condenser microphones, the Phantom Power should be activated. However, when Phantom Power button is engaged, single ended (unbalanced) microphones and instruments should not be used on the Mic inputs.

2. Line Inputs

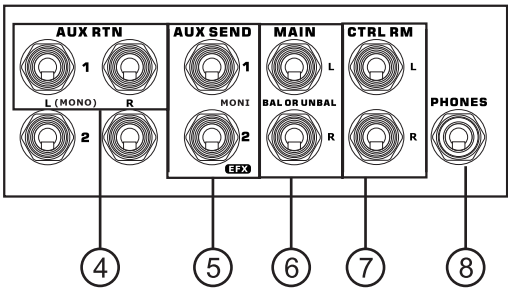
This input accepts typical 1/4” TRS or TS inputs, for balanced or unbalanced signals. They can be used in conjunction with various line level devices, such as keyboards, drum machines, electric guitars, and a variety of other electric instruments.

3. Stereo Channels



The Helix Board 12 FireWire MKII mixer features a couple of stereo channels, thrown in for maximum flexibility. Each of these stereo channels features two 1/4” TRS phone jacks, for the addition of various line level input devices, such as electronic keyboards, guitars and external signal processors or mixers.

These Stereo Channels can also be used as Mono channels, where the signal from any 1/4” phone jack plugged into the Left stereo input will be duplicated to the Right input due to the miracle of jack normalizing (this does not work in reverse, however).



4. Stereo AUX Return

These 1/4” TS inputs are for the return of audio to the Helix Board 12 FireWire MKII mixer, processed by an external signal processor. If really needed, they can also be used as additional stereo inputs, with a level control located on the face of the mixer. The Stereo AUX Return can also accept Mono signals, where plugging the 1/4” phone jack of any device into the Left input will cause the signal to be duplicated to the Right input also (this does not work in reverse, however). Signals processed by the built-in digital effects processor are cut-off when any 1/4” phone jack is plugged into the AUX return 2.

5. AUX / Effects Send

These 1/4” TS outputs may be used to connect to an external digital effect processor, or even to an amplifier and speakers (depending on your desired settings), to the mixer. The AUX send is a pre-fader signal, suitable for sending to monitors to allow performers to monitor their music. The EFX send signal is post-fader, suitable for sending to external effect processors, and then return back to the AUX returns.

6. Main L and R Outputs

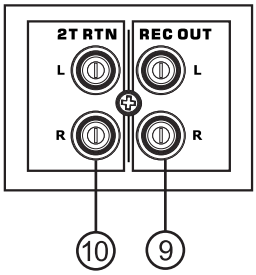
These two ports will output the final stereo balanced line level signal sent from the main mixing bus. The primary purpose of these jacks is to send the main output to external devices, which may include power amplifiers (and in-turn, a pair of speakers), other mixers, as well as a wide range of other possible signal processors (equalizers, crossovers, etcetera).

7. Control Room Outputs

These two 1/4” Phone Jack outputs feed the signal altered by the Control Room / Submix control on the face of the mixer. This output has extensive use, as it can be used to feed the signal from the mixer to an active monitor, for the monitoring of the audio signal from within a booth, among other possible uses.

8. Phones
This stereo output port is suited for use with headphones, allowing monitoring of the mix. The audio level of this output is controlled using the Control Room / Submix rotary control.

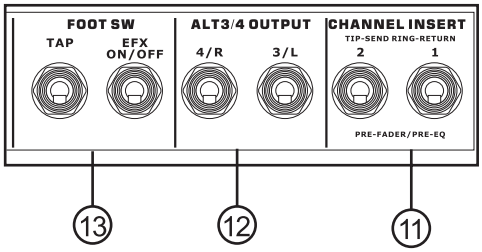
9. Record Out
These outputs will accommodate RCA cables, able to be fed to a variety of recording devices.



10. 2T Return
This stereo RCA input is used to connect the mixer with external devices, such as tape and CD players, and feeds the signal to the Main L-R mixing bus.

Rear Panel

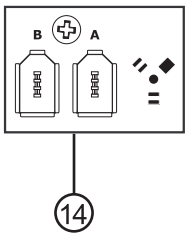
11. Channel Inserts
Located on the rear of the Helix Board, the primary use for these TRS phone jacks is for the addition of external devices, such as dynamic processors or equalizers, to mono input channels 1 and 2. This will require a Y cord that can send (pre-fader and pre-EQ) and receive signals to and from an external processor. On this connection, the tip pin is for sending the signal, whereas the ring pin is for return. The sleeve pin, on the other hand, is the ground.



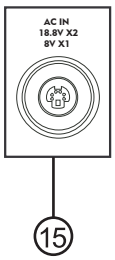
12. ALT 3-4 Output
The signal sent from these 1/4” outputs is fed from the ALT 3-4 mixing bus, and can be used in conjunction with a large array of devices, including signal processors, other PA systems, recording devices, and so on.

13. Foot Switch Jacks
These ports are for the inclusion of a foot switch, used to remotely adjust properties of the built-in Digital Effect processor, to the mixer. The left jack is used to adjust the tap delay properties, whereas the right jack is used for turning the effects on and off.

14. FireWire Connection
These two FireWire ports are for connecting the Helix Board to any PC or Macintosh computer. They allow all 10 audio channels to be streamed to a computer, and the 2 audio channels of the computer to be streamed back to the Helix Board for monitoring purposes. The signal of audio channels sent to the computer is pre- or post-fader, depending on the pre/post setting on each input channel. The main left and right signal (also sent through the FireWire interface) is a pre-main fader signal. The returned FireWire signal can be utilized in the FireWire Return section on the face of the mixer.

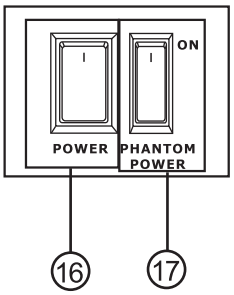


15. Power Connector
This port is for the addition of a power cable and supply, allowing power to be supplied to the mixer. Please use the external power supply that is included with this mixer only as using other adaptors could damage the mixer. For a replacement supply, contact your nearest Phonic dealer.



CONTROLS AND SETTINGS

Rear Panel

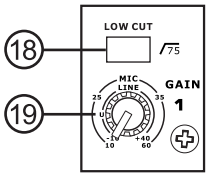


16. Power Switch
This switch is used to turn the mixer on and off. Ensure you turn all level controls down before activating.

17. Phantom Power Switch
When this switch is in the on position, it activates +48V of phantom power for all microphone inputs, allowing condenser microphones (well, the ones that don't use batteries) to be used on these channels. Activating Phantom Power will be accompanied by an illuminated LED above the left channel Level Meter. Before turning Phantom Power on, turn all level controls to a minimum to avoid the possibility of a ghastly popping sound from the speakers.

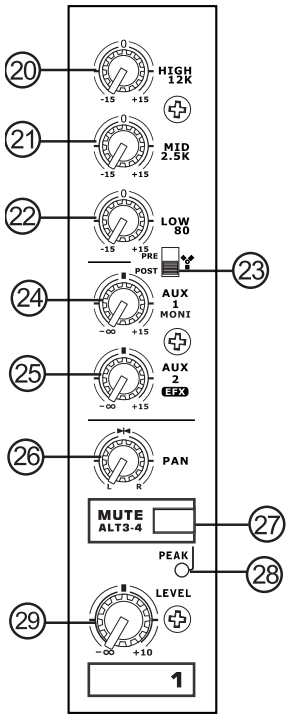
NB. Phantom Power should be used in conjunction with balanced microphones. When Phantom Power is engaged, single ended (unbalanced) microphones and instruments should not be used on the Mic inputs. Phantom Power will not cause damage to most dynamic microphones, however if unsure, the microphone's user manual should be consulted.

Channel Controls



18. Low Cut Filter (75 Hz)
This button, located on channels 1 through to 4, will activate a low-cut / high-pass filter that reduces all frequencies below 75 Hz at 18 dB per Octave, helping to remove any unwanted ground noise or stage rumble.

19. Mic / Line Gain Control
This controls the sensitivity of the input signal of the Microphone / Line input. The gain should be adjusted to a level that allows the maximum use of the audio, while still maintaining the quality of the feed, based on the channel setup instructions. This can be accomplished by adjusting it to a level that will allow the peak indicator occasionally illuminate. All 4 mono channels feature this control.



20. High Frequency Control
This control is used to give a shelving boost or cut of ±15 dB to high frequency (12 kHz) sounds. This will adjust the amount of treble included in the audio of the channel, adding strength and crispness to sounds such as guitars, cymbals, and synthesizers.

21. Middle Frequency Control
This control is used to provide a peaking style of boost and cut to the level of middle frequency (2.5 kHz) sounds at a range of ±15 dB. Changing middle frequencies of an audio feed can be rather difficult when used in a professional audio mix, as it is often more desirable to cut middle frequency sounds rather than boost them, thereby soothing overly harsh vocal and instrument sounds in the audio.

22. Low Frequency Control
This control is used to give a shelving boost or cut of ±15 dB to low frequency (80 Hz) sounds. This will adjust the amount of bass included in the audio of the channel, and bring more warmth and punch to drums and bass guitars.

23. FireWire Pre / Post Switch
This switch is used to change the signal of the corresponding channel that is sent to the Computer via the FireWire interface between that of a pre-EQ, pre-fader, pre-low cut to that of a post-EQ, post-fader, post-low cut. In the upper-most position, the channel will be pre, and in the lower position post.

24. AUX 1 (Monitor) Control
This control allows the user to send the corresponding signal to the AUX 1 output, which can be used in conjunction with an amplifier and studio or stage monitors, or simply as an auxiliary output for any means required. The control is pre-fader, therefore any changes made to the corresponding channel level control do not affect the AUX 1 send signal.

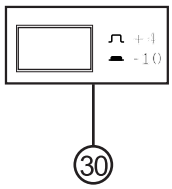
25. AUX 2 (Effects) Control
This control alters the signal level that is sent to the AUX 2 (or EFX) send output, which can be used in conjunction with external signal processors (this signal of which can be returned to mixer via the AUX return input, or any stereo input channel), or simply as an auxiliary output for any means required. This control is post-fader, therefore any changes made to the corresponding channel level control are also applied to the EFX signal. The EFX send signal is also sent to the built-in effect processor for providing effects to the main output and AUX 1 send, as required.

26. Pan / Balance Controls
This alternates the degree or level of audio that the left and right side of the main mix should receive. On mono channels, this control will adjust the level that the left and right should receive (pan), where as on a stereo channel, adjusting the BAL control will attenuate the left or right audio signals accordingly (balance).

27. Mute / ALT 3-4
This handy little button is basically a typical mute button – effectively stopping any signal received by the channel from being sent to the Main L/R or AUX 2 send mixing buses – however it does so much more. Pushing this button routes the channel's signal away from the Main L/R and to its own "Alternate" stereo output (Alt 3-4), where the signal can be used at will. If you wish to use it to connect an amplifier and speakers, or simply patch it through to an unused input channel, you can easily do so.

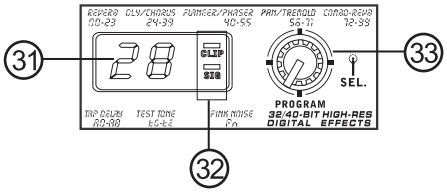
28. Peak Indicator
This LED indicator will illuminate when the device hits high peaks, 6 dB before overload occurs. It is best to adjust the gain of the channel so that the PEAK indicator lights up on intervals only. This will ensure a greater dynamic range of audio. This LED will light up while the Mute button is pushed in.

29. Level Control
This rotary control will alter the signal level that is sent from the corresponding channel to the Main or Alt. 3-4 mixing bus.

30. +4 / -10 Switch


This button, located on both stereo input channels, is used adjust the input sensitivity of the corresponding channels, which will adapt the mixer to external devices which may use different operating levels. If the input source is -10 dBV (consumer audio level), it is best to engage the switch, allowing the signal to be heard. The +4 dBu level is suitable for Professional Audio signals, which are considerably higher than the consumer level. However, if you are unsure of the source's operating level, we suggest leaving the switch disengaged until you test the source's signal. You can then engage if necessary (if the level of the input signal is obviously too low).

Digital Effect Section

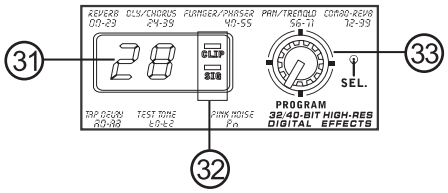


31. Digital Effect Display
This 2-digital numeric display shows the program number that is currently applied to your EFX audio signal. When you rotate the Program control, you can scroll through different program numbers; however the display will revert back to the original program if a new program is not selected within a few seconds. For a list of available effects, please observe the Digital Effect Table.

32. Sig and Clip Indicators
Located within the Digital Effect Display are Clip and Sig LEDs. The Sig LED will light up when any signal is received by the effect processor, and the Clip LED will light up shortly before excessive signals are dynamically clipped. If the Clip LED lights up too often, it may be advisable to turn down the AUX 2/EFX control on one or all input channels to ensure the signal level is not excessive.

33. Program Control

This control is used to scroll through the various effects. Turning the control clockwise will allow users to ascend into higher program numbers, and turning it counter-clockwise will allow users to descend into lower program numbers. Pushing this control will apply the new effect. When a tap-delay effect is selected, pressing this control will allow users to select the tap-delay time.

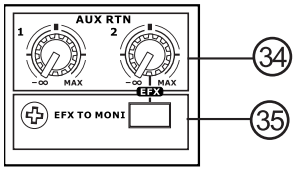


By pushing the button several times, the effect processor interprets the time between last two pushes and remembers this as the delay time – until the button is pushed again. This is kept even after the power is turned off. When the tap delay effect is selected, a small LED will flash within the digital effect display window at the selected intervals.

Master Section

34. AUX Stereo Return Controls

These controls adjust the signal level of audio fed through to the AUX Stereo Return inputs, which will be added to the MAIN L-R mix. The AUX Return 2 control also acts as the built-in DSP Effect level control, when no device is plugged into the AUX 2 Return jacks.

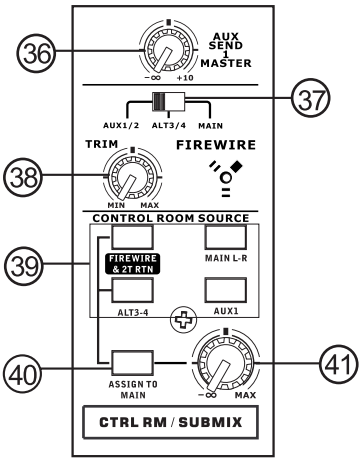


35. EFX to Monitor button

This button allows users to select the destination of the AUX Return 2 signal. Pushing it in sends the signal to the AUX Send 1 mixing bus.

36. AUX Send 1 Master Control

This control will adjust the final output level for the AUX send output, the signal of which is taken from the AUX 1 from each input channel.



37. FireWire Source Select

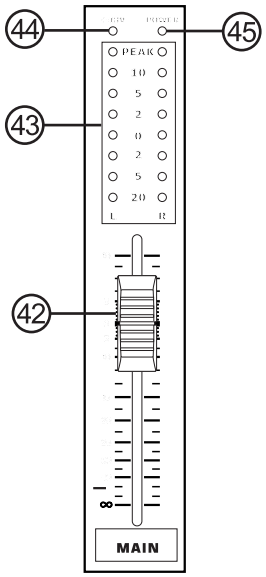
This switch determines which of teh Helix Board's signals will be used for the 9th and 10th channels sent through the FireWire interface to the computer. Users can choose to send the stereo signal from AUX 1/2, Alt 3/4 or the Main mix through the FireWire interface to the computer.

38. FireWire Trim Control and Indicator

This trim control can be used to adjust the level of the outgoing FireWire signal from channel 9/10 (which will be received by the computer). If the input signals received by your computer are noticeably excessive, using this control could help to attenuate the signal to an acceptable degree. The accompanying LED will illuminate when a connection is established through the FireWire interface.

39. Control Room Buttons

Engaging any of these four buttons will enable you to use the signal from any of the corresponding sources to send to the Control Room mixing bus and the LED Level Meter for level monitoring. For instance, pressing FireWire & 2T Rtn button will allow you to send the 2 Track Return signal and the signal received through the FireWire interface to the Control Room Outputs (the level of which will be visible on the Level Meter), where as the Main L-R will allow you to use the Main Left/Right signal, the AUX 1 allows you to use the AUX 1 signal, and the ALT 3-4 allows you to use the "Alternate" stereo mix bus signal. You can even use a combination of all these signals, if need be.



40. Assign to Main Button

When the “Assign to Main” button is engaged, the FireWire/2T Return and Alternative 3-4 signals can be selected by using the corresponding buttons, and are, intern, sent to the Main L-R and Control Room mixing buses via the Control Room / Submix control. This can come in handy when you want play a CD during intermission in a live show, as this allows users to send the signals from the FireWire interface, 2T RTN and/or ALT 3-4 to the main left and right outputs. If you have the Main L-R or AUX 1 buttons on the Control Room Source section engaged, the corresponding signals will not be sent to the control room and headphones output by the use of this button.

41. Control Room / Submix Control

This control is used to adjust the audio level of the Control Room feed, which is sent to both the Control Room outputs (for monitoring, acting as side fill or other purposes) and Phones outputs (to be used in conjunction with headphones for monitoring purposes). It also acts as the “Submix” control, which allows the user to adjust the level of the signals selected by the Control Room Source when the Assign to Main button is engaged.

42. Main Level Fader

This 60mm fader is final level control for the main left and right audio feed, sent to the Main L and R output.

43. Level Meter

The stereo 8-segment level meter gives an accurate indication of when audio levels of the selected Control Room source(s) reach certain levels. It is suggested for the maximum use of audio to set the various levels controls so that the Peak LEDs flash only occasionally (and perhaps it is better if you ensure the level stays around a pinch below that).

44. +48 Indicator

The +48 Indicator illuminates whenever the Phantom Power switch is activated.

45. Power Indicator

The Power Indicator will light up when the power of the mixer is on.

FireWire Interface

System Requirements

The following are the minimum required specifications for use with the Helix Board FireWire mixer. If your computer does not meet these requirements, you will experience lagging of audio and possible freezing of your computer when attempting to operate the mixer.

Windows

- Microsoft® Windows® XP SP1 and SP2
- Available FireWire port (Suggested Firewire Interface: ADS pyro 64 Firewire card with a TI chip)
- Intel Pentium® 4 processor or equivalent AMD Athlon processor
- Motherboard with Intel or VIA chipset 5400 RPM or faster hard disk drive (7200 RPM or faster with 8 MB cache recommended)
- 256 MB or more of RAM (512 MB recommended)

Macintosh

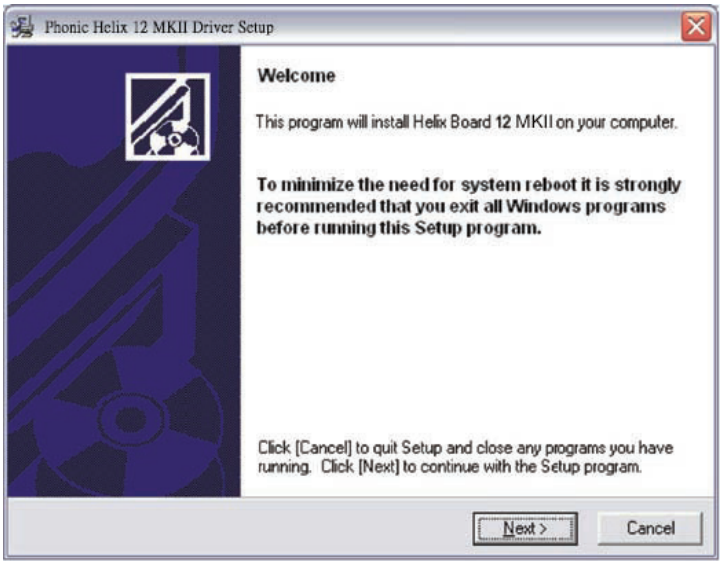
- OS X 10.3.5 or later with native FireWire support
- G4 or newer processor
- 256 MB or more of RAM

Driver Installation

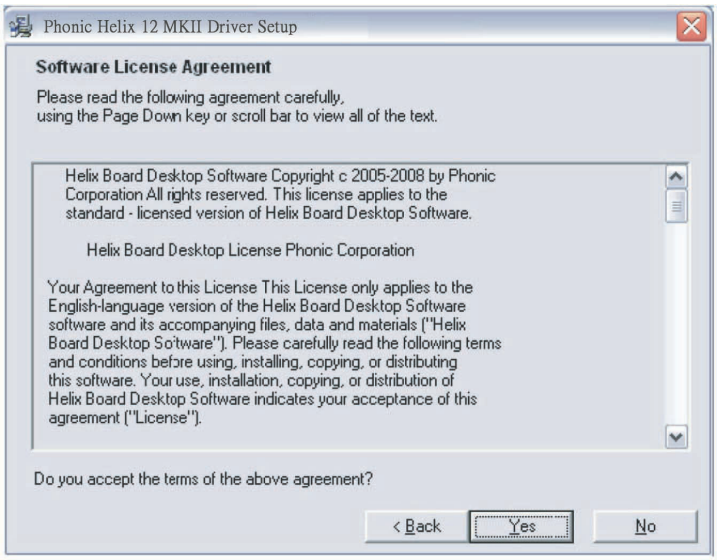
To use the Helix Board FireWire mixer efficiently (or at all) on a PC, it is important to install all the necessary drivers from the included CD (ASIO and WDM drivers). It is important that users read all instructions carefully before continuing on to the each step of installation, as users will be required to unplug and plug in their FireWire device. This is not necessary for Mac users.

Windows XP (with Service Pack 1 or 2)

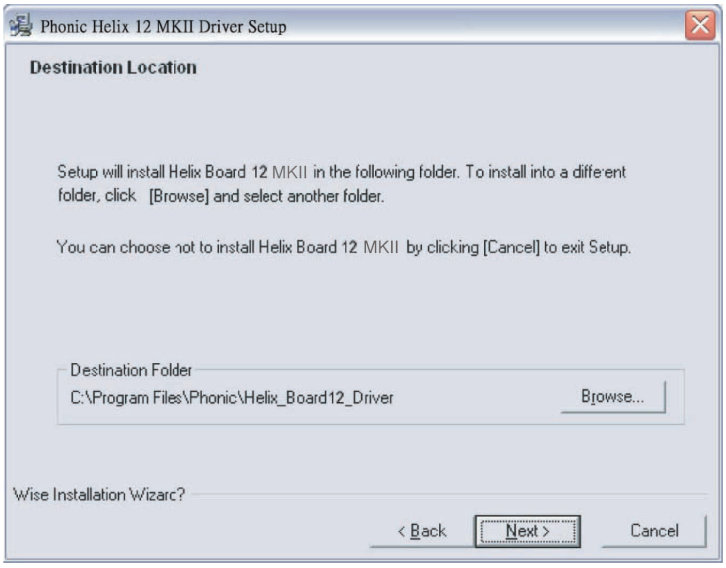
1. It is recommended that you quit all applications before starting the installation process.
2. Ensure the Helix Board FireWire is ***not*** yet connected to your Computer's FireWire input.
3. Insert the installation CD included with your Helix Board FireWire mixer into the CD-ROM drive of your computer. If the CD does not automatically start the installation process within a few moments, then navigate to "My Computer" → your CD-ROM drive → "Drivers and Control Panel" → double-click "setup.exe" to begin the installation manually. The Helix Board FireWire Control Panel software also will be installed at this time.
4. Follow the installation instructions.



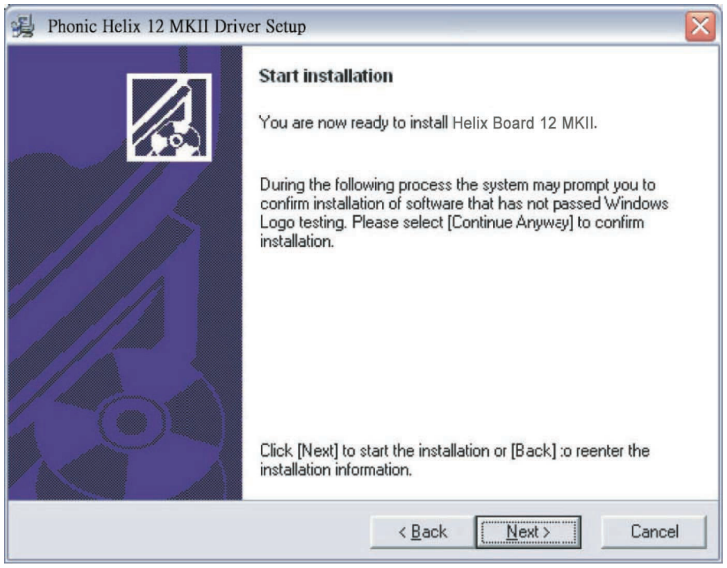
Make sure no other programs are running on your PC and that the Helix Board is not connected to your PC, then click "Next".



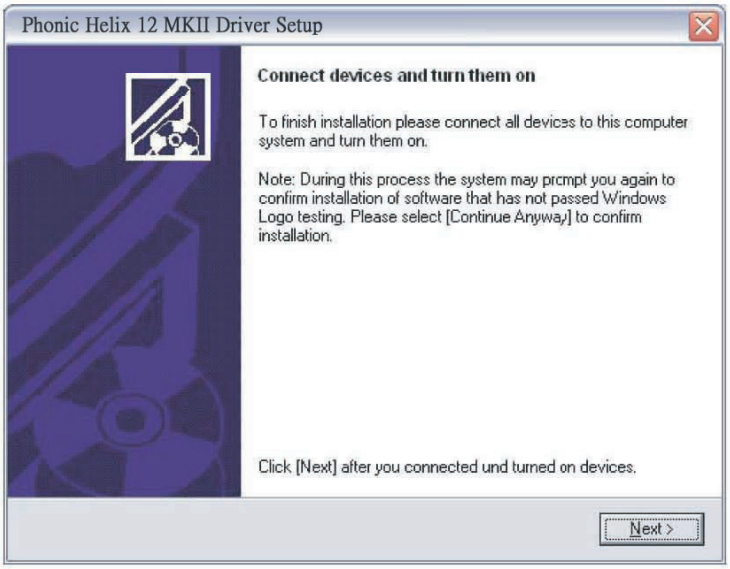
Read and accept the terms of the License Agreement and click "Yes" to continue.



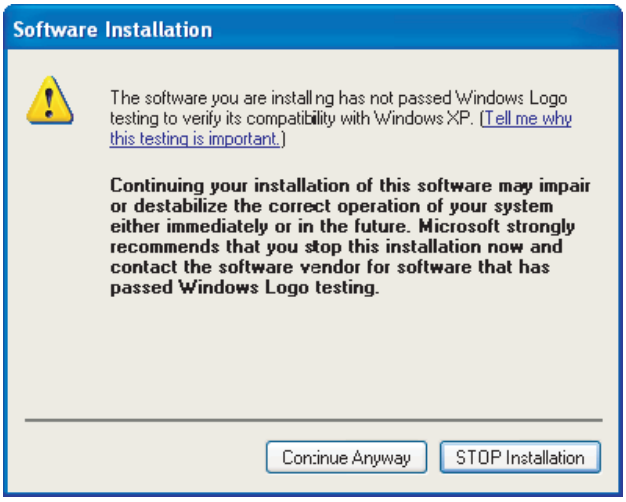
Either select a new destination for the installation, or else click "Next" to accept the default directory



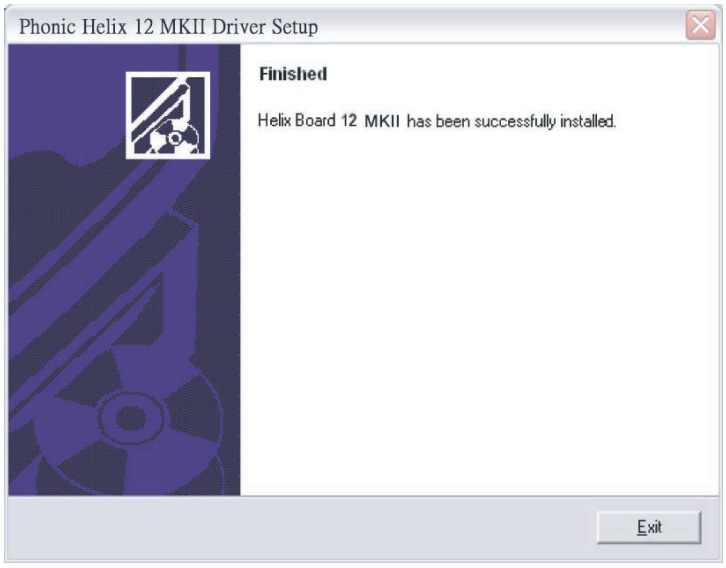
Click "Next" to begin the installation.



Connect the Helix Board FireWire MKII to the Computer and turn the power on.



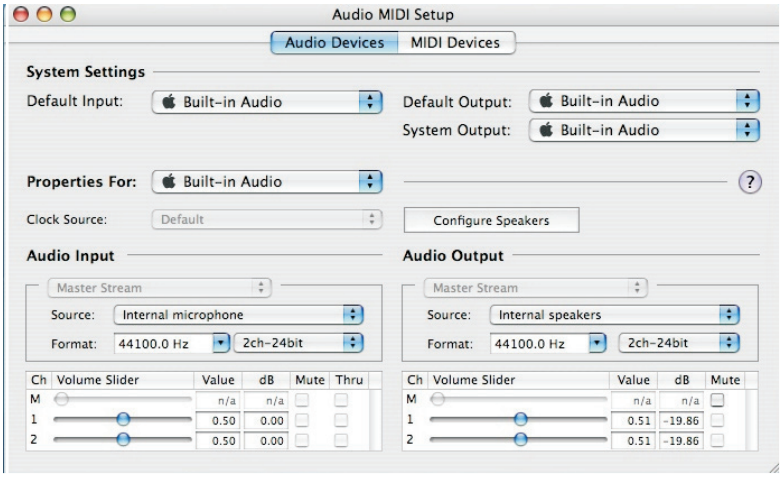
If a message is displayed indicating that the software has not passed Windows Logo test, click Continue Anyway



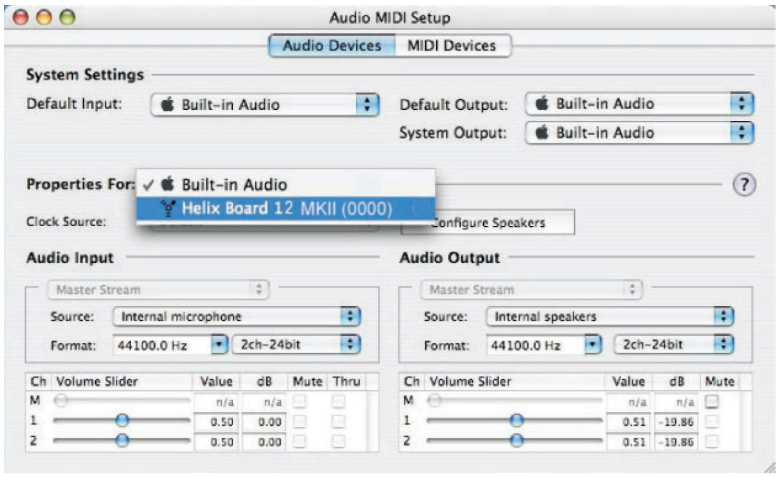
After installation is complete, users are free to use the device as they wish.

Macintosh OS X (10.3.5 or later)

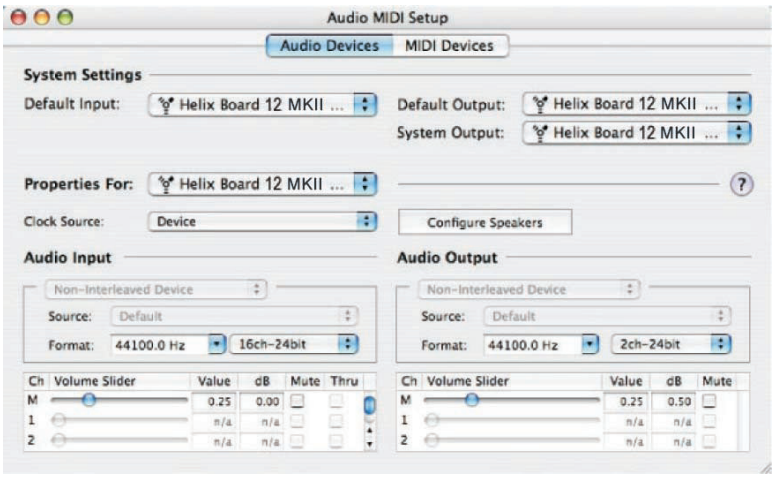
The Helix Board 12 FireWire MKII works with the primary audio drivers of Macintosh OS X 10.3.5 and later. First verify that you are running Macintosh OS X 10.3.5 or above, then connect the Helix Board 12 FireWire MKII to a FireWire port to the computer. To ensure your Helix Board 12 FireWire MKII is working, enter the Utilities folder and double-click the Audio MIDI Setup icon.



Enter the Audio Devices section. From the "Properties for" pull-down tab, select Helix Board 12 FireWire MKII.



At the bottom of the window, users can edit the setup of the Helix Board FireWire MKII. Properties such as sampling rate and clock source can be altered. Users may also opt to make the Helix Board FireWire MKII their default input and /or output device.



Mac users are able to use GarageBand Digital Audio Workstation Software, in conjunction with the Helix Board 12 FireWire MKII.

Channel Assignment

When using a Digital Audio Workstation on a PC, and within the included Phonic Helix Board FireWire control panel software, the following names have been attributed to the input channels of the FireWire mixer. They can be altered through the control panel software included with the mixer.

FireWire Input Channel Name	Mixer Channel
Phonic HB 12 MKII CH 1	Channel 1
Phonic HB 12 MKII CH 2	Channel 2
Phonic HB 12 MKII CH 3	Channel 3
Phonic HB 12 MKII CH 4	Channel 4
Phonic HB 12 MKII CH 5	Channel 5 (Stereo L)
Phonic HB 12 MKII CH 6	Channel 6 (Stereo R)
Phonic HB 12 MKII CH 7	Channel 7 (Stereo L)
Phonic HB 12 MKII CH 8	Channel 8 (Stereo R)
Phonic HB 12 MKII Main L	User definable
Phonic HB 12 MKII Main R	User definable

To alter an input channel s name on your computer, open the Helix Board FireWire control panel software. On the left hand side of the control panel, users will find the settings categories. By clicking Input Channels , the main window will display the titles input channels. You can then highlight the channel names and press the Edit Channel Name button on the bottom of the control window. A new window will appear that will allow users to adjust the channel name.

If you would like to use the Helix Board Firewire MKII as your default audio output device on you PC, simply go into the Windows control panel, and select "Sound and Audio Devices". Select the Audio tab, and use the pull-down menu to select the Helix Board 12 FireWire MKII from the list of available output devices. The Helix Board Firewire 12 MKII can also be selected as the default output device for individual programs by editing said programs settings/options.

Cubase LE

Cubase LE is a fairly powerful program provided along with the Helix Board FireWire mixer that allows users to record, edit, delete, and alter their tracks. Please note that only 4 tracks can be recorded at once with the version of Cubase included, and users must upgrade or find other suitable DAW software if they choose to record more tracks.

Installation

Insert the Cubase LE installation CD that came with your mixer into the CD drive of your computer. Run the installer. The serial number will be automatically entered in when installing.

Setup

After successfully completing the installation process, the following process must be followed to work efficiently with the Helix Board 12 FireWire MKII mixer.

1. Open the Cubase LE program.
2. Go to the Devices pull-down menu and select Device Setup . On the left, select VST Multitrack .
3. From the ASIO Driver drop-down list, select Phonic HB12 MKII Driver. A pop-up box will ask you if you want to switch the ASIO driver. Click Switch. This completes the basic installation and setup.
4. Activating audio tracks received from the Helix Board mixer.
   a. Go to the devices pull-down menu and select VST Inputs . This will display the various inputs (Phonic HB 12 MKII Ch 1 , “Phonic HB 12 MKII Ch 2”, etc.)
   b. Activate 8 of these channels by clicking the Active button located next to each channel name. Please note, only 8 input channels can be activated at any one time. This is a limitation of Cubase LE, and if more input channels are needed, we suggest upgrading to a higher version of Cubase, or use other DAW software.
5. For further instructions on the operation of Cubase, please consult the user manual by pressing F1 while the program is open.

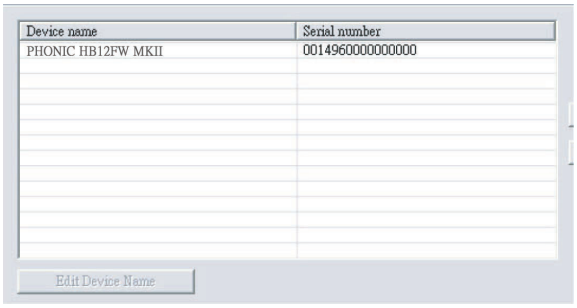
If you wish to reset the Helix Board FireWire ASIO driver, simply go to the devices pull-down menu and select device setup . Simply click reset and select the Phonic FireWire Audio driver. Click ok to continue and the Helix Board 12 FireWire MKII should once again become functional.

Helix Board Control Panel

The Helix Board FireWire MKII control panel can be accessed at any time by entering choosing the shortcut from your Programs menu. This program will not only allow users to alter their device and channel names and properties, but will also let them correct for latency issues, change sampling rates, and so forth. When opening the software, a number of options will be available for users to select from, allowing them to adjust the available properties.

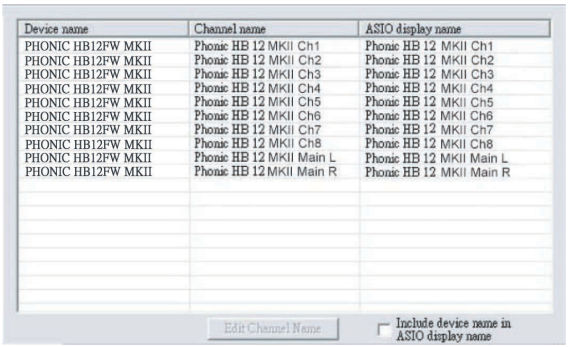
Devices

In the Devices section, users are able to view and edit the name of the Phonic MKII Devices connected to their computer.



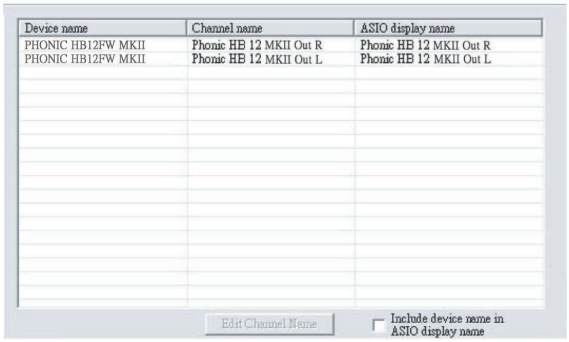
Input Channels

The Input Channels section allows users to view and edit the name of the various input channels received from the FireWire input. For a list of default channel names, please consult the table on page 16.



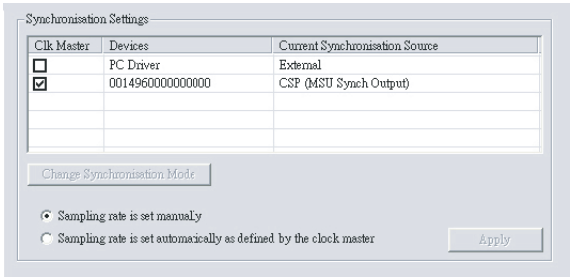
Output Channels

By entering the Output Channels section, users can view and edit the names of the two output channels from the computer to the Helix Board 12 Firewire MKII mixer.



Synchronization

In the Synchronization section, users can adjust the sampling rate and other synchronization properties. Many of these adjustable properties, as they are, are set for optimum performance and, unless you are sure of what you need to change, are probably best left alone.



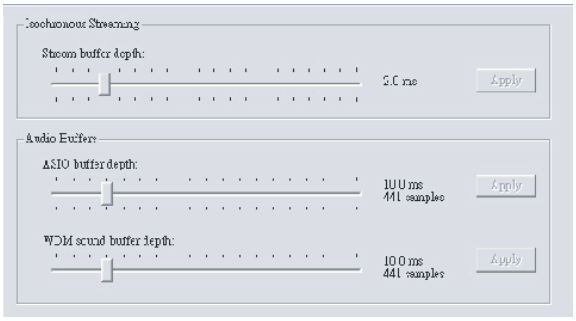
First off, the synch mode can be altered, though making this alteration is not recommended for novice users. The synch mode is basically the way the computer determines what the clock source (ie. device that your computer will use to determine the timing of all digital signals received) will be. The default setting for this feature is "CSP", meaning the Helix Board 12 FireWire MKII is the master clock source of the device. The other options allow users to make the Helix Board 12 FireWire follow the timing of whichever device is the clock source. Having two clock sources has the potential to create very undesireable audio, soit is best avoided. If the Helix Board 12 FireWire MKII is the only piece of digital audio equipment attached to the computer, there is no reason this option should be changed.

Users are also able to change between automatic and manual sampling rate settings. When the sampling rate is manually set, users can select between sampling rates of 44.1, 48.0, 88.2 and 96.0 kHz per second. Many devices have sampling rates that do not surpass 44.1 kHz per second, therefore, when using multiple digital devices, users are advised not to exceed this level unless they are sure the secondary device s sampling rate can .

Settings

Users are able to adjust various buffer times in the Settings section.

The *Stream Buffer Depth* is adjustable between 0.5 and 20 milliseconds. It adjusts the buffer used when streaming a signal from the Helix Board 12 FireWire. If the depth is set too high, an obvious latency will become evident. If the depth is too low, various clicks and pops may become obvious. It is best to set the Stream Buffer Depth to a level that allows users to get the lowest latency, while still maintaining an optimal performance. The default settings are ideal for most computers.



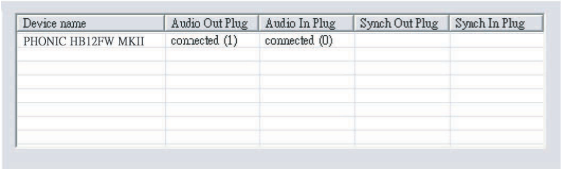
The *ASIO Buffer Depth* is adjustable between 4 and 40 milliseconds. This allows users to adjust the latency of the stream received by ASIO driver-based software (including Steinberg Cubase LE).

The *WDM (Windows Driver Model) Sound Buffer Depth* is adjustable between 4 and 40 milliseconds. This allows users to adjust the latency of the stream received by WDM based programs.

Also in this section, users are able to view their "drop out statistics", where the number of times the FireWire connection has been interupted can be viewed.

Streams

In the Streams section, the Helix Board 12 FireWire device properties can be viewed. Each input and output stream can be scrutinized, and the isochronous stream number and its supported sampling rates can be viewed.



Device name	Audio Out Plug	Audio In Plug	Synch Out Plug	Synch In Plug
PHONIC HB12FW MKII	connected (1)	connected (0)		

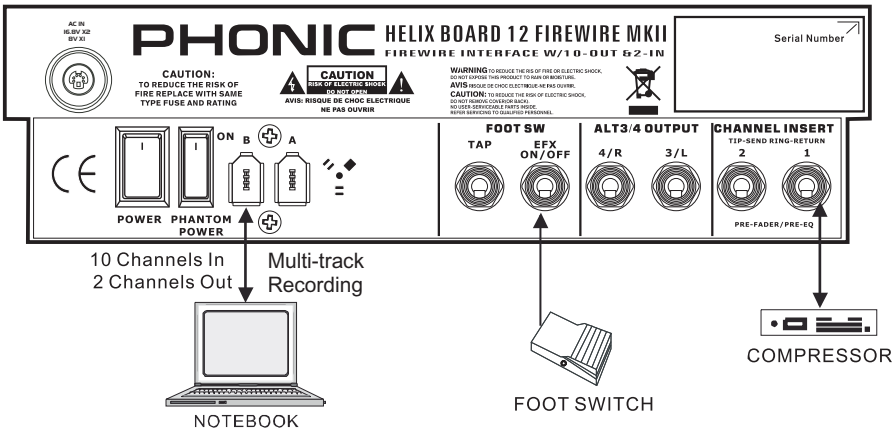
DIGITAL EFFECT TABLE

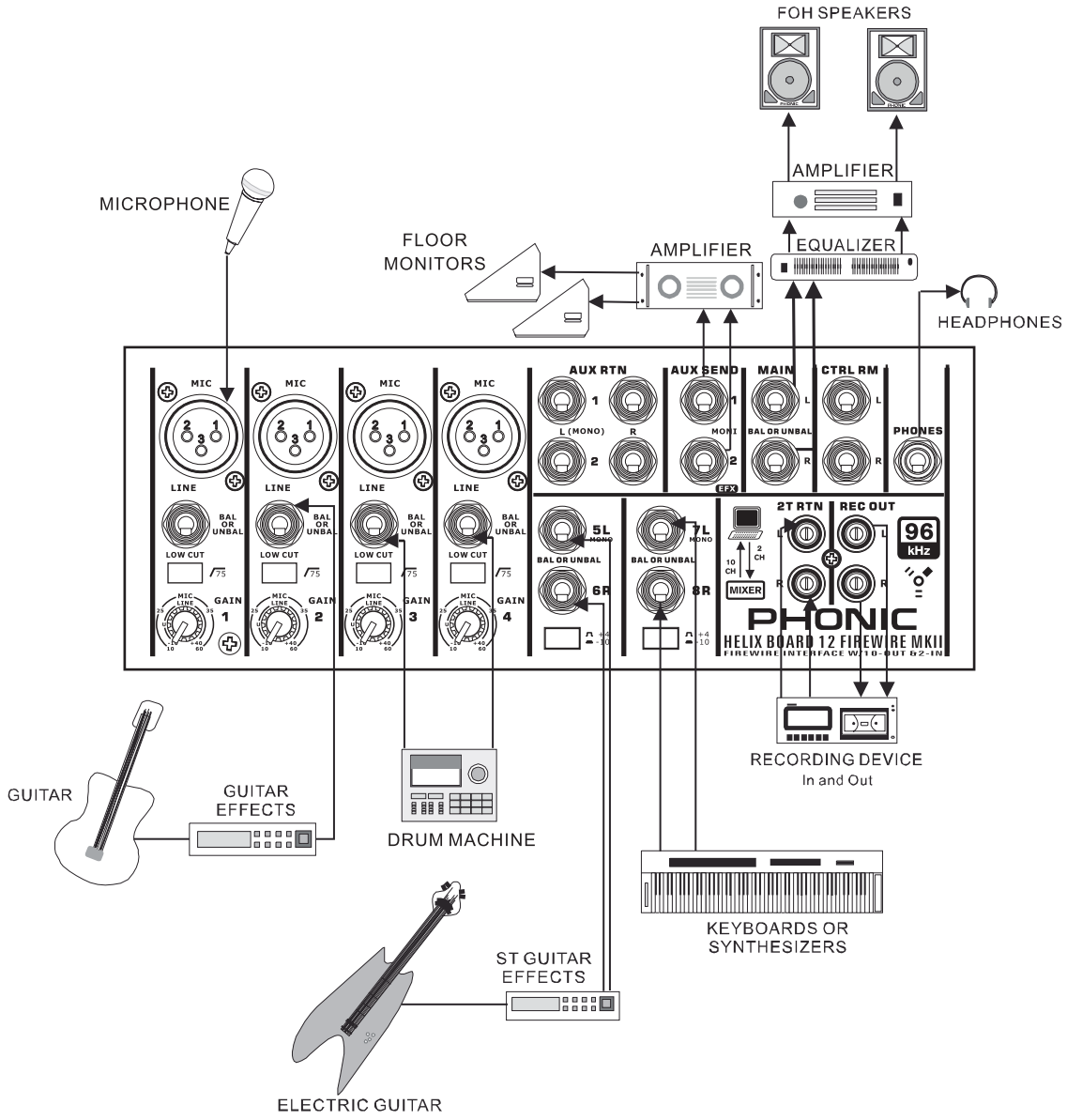
NO	PROGRAM NAME	PARAMETER SETTING	
	ROOM	**REV-TIME**	**EARLY LEVEL**
00	COMPACT ROOM 1	0.05	100
01	COMPACT ROOM 2	0.4	0
02	SMALL ROOM 1	0.45	100
03	SMALL ROOM 2	0.6	90
04	MID ROOM 1	0.9	100
05	MID ROOM 2	1	50
06	BIG ROOM 1	1.2	100
07	TUNNEL	3.85	100
	HALL	**REV-TIME**	**EARLY LEVEL**
08	JAZZ CLUB	0.9	90
09	SMALL HALL 1	1.5	72
10	SMALL HALL 2	1.75	85
11	SPRING HALL	1.9	98
12	MID HALL 1	2.3	100
13	MID HALL 2	2.45	80
14	RECITAL HALL	2.7	96
15	BIG HALL 2	3.3	88
	PLATE	**REV-TIME**	**HPF**
16	SMALL PLATE	0.9	0
17	TAIL PLATE	1.2	20
18	MID PLATE 1	1.3	0
19	MID PLATE 2	2.2	0
20	REVERSE PLATE	2.25	42
21	LONG PLATE 1	2.6	80
22	LONG PLATE 2	3	625
23	LONG PLATE 3	4.2	0
	DELAY (stereo)	**DELAY AVERG.**	**R-LEVEL**
24	SHORT DELAY 1	0.07	60
25	SHORT DELAY 2	0.14	60
26	PING PONG DELAY	0.11	55
27	MID DELAY 1	0.15	55
28	MID DELAY 1	0.3	60
29	SHORT DELAY 1 (MONO)	0.06	100
30	MID DELAY 1 (MONO)	0.13	100
31	LONG DELAY 1 (MONO)	0.18	100
	CHORUS	**LFO**	**DEPTH**
32	SOFT CHORUS	0.2	56
33	SOFT CHORUS 2	0.5	70
34	SOFT CHORUS 3	0.8	75
35	WARM CHORUS	1.8	85
36	WARMER CHORUS 1	3.2	80
37	WARMER CHORUS 2	5.2	45
38	WARMER CHORUS 3	7.8	52
39	HEAVY CHORUS	9.6	48
	FLANGER	**LFO**	**DEPTH**
40	CLASSIC FLANGER 1	0.1	44
41	CLASSIC FLANGER 2	0.3	63
42	GENTLE FLANGER	0.6	45
43	WARM FLANGER	1.6	60
44	MODERN FALANGER 1	2	85
45	MODERN FALANGER 2	2.8	80
46	DEEP FALANGER 1	4.6	75
47	DEEP FALANGER 2	10	60
	PHASER	**LFO**	**DELAY**
48	CLASSIC PHASER 1	0.1	3.6
49	CLASSIC PHASER 2	0.4	2.6
50	COOL PHASER	1.4	0.7
51	WARM PHASER	3.2	0.3
52	HEAVY PHASER 1	5	1.2
53	HEAVY PHASER 2	6	2.8
54	WILD PHASER 1	7.4	0.8
55	WILD PHASER 2	9.6	4.8

NO	PROGRAM NAME	PARAMETER SETTING	
	PAN	**SPEED**	**TYPE**
56	SLOW PAN	0.1	R-->L
57	SLOW PAN 1	0.1	R<-->L
58	SLOW PAN 2	0.4	R-->L
59	MID SHIFT	0.8	R<-->L
60	MID SHIFT 1	1.2	L-->R
61	MID SHIFT 2	1.8	L-->R
62	MID SHIFT 3	1.8	R-->L
63	FAST MOVE	3.4	R<-->L
	TREMOLO	**SPEED**	**MODE-TYPE**
64	LAZY TREMOLO	0.8	TRG
65	VINTAGE TREMOLO	1.5	TRG
66	WARM TREMOLO	2.8	TRG
67	WARM TREMOLO 1	4.6	TRG
68	HOT TREMOLO	6.8	TRG
69	HOT TREMOLO 1	9.6	TRG
70	CRAZY TREMOLO 1	15	TRG
71	CRAZY TREMOLO 2	20	TRG
	DELAY+REV	**REV**	**DELAY**
72	DELAY+REV 1	1	1
73	DELAY+REV 2	2	2
74	DELAY+REV 3	3	3
75	DELAY+REV 4	4	4
76	DELAY+REV 5	5	5
77	DELAY+REV 6	6	6
78	DELAY+REV 7	7	7
79	DELAY+REV 8	8	8
	CHORUS+REV	**REV**	**CHORUS**
80	CHORUS+REV 1	1	1
81	CHORUS+REV 2	2	2
82	CHORUS+REV 3	3	3
83	CHORUS+REV 4	4	4
84	CHORUS+REV 5	5	5
85	CHORUS+REV 6	6	6
86	CHORUS+REV 7	7	7
87	CHORUS+REV 8	8	8
	FLANGER+REV	**REV**	**FLANGER**
88	FLANGER+REV 1	1	1
89	FLANGER+REV 2	2	2
90	FLANGER+REV 3	3	3
91	FLANGER+REV 4	4	4
92	FLANGER+REV 5	5	5
93	FLANGER+REV 6	6	6
94	FLANGER+REV 7	7	7
95	FLANGER+REV 8	8	8
	GATED-REV	**RELEASE**	**REV**
96	GATED-REV-1 9	0.02	TAIL PLATE
97	GATED-REV-2 10	0.2	TAIL PLATE
98	GATED-REV-1 9	0.02	REVERSE PLATE
99	GATED-REV-2 10	0.5	REVERSE PLATE
	TAP DELAY	**FB LEVEL**	**RANGE**
A0	TAP DELAY	0	100mS - 2.7S
A1	TAP DELAY	10	100mS - 2.7S
A2	TAP DELAY	20	100mS - 2.7S
A3	TAP DELAY	30	100mS - 2.7S
A4	TAP DELAY	40	100mS - 2.7S
A5	TAP DELAY	50	100mS - 2.7S
A6	TAP DELAY	60	100mS - 2.7S
A7	TAP DELAY	70	100mS - 2.7S
A8	TAP DELAY	80	100mS - 2.7S
	TEST TONE	**FREQUENCY**	**SHAPE**
T0	LOW FREQUENCY	100Hz	SINEWAVE
T1	MID FREQUENCY	1kHz	SINEWAVE
T2	HIGH FREQUENCY	10kHz	SINEWAVE
PN	PINK NOISE	20Hz~20kHz	

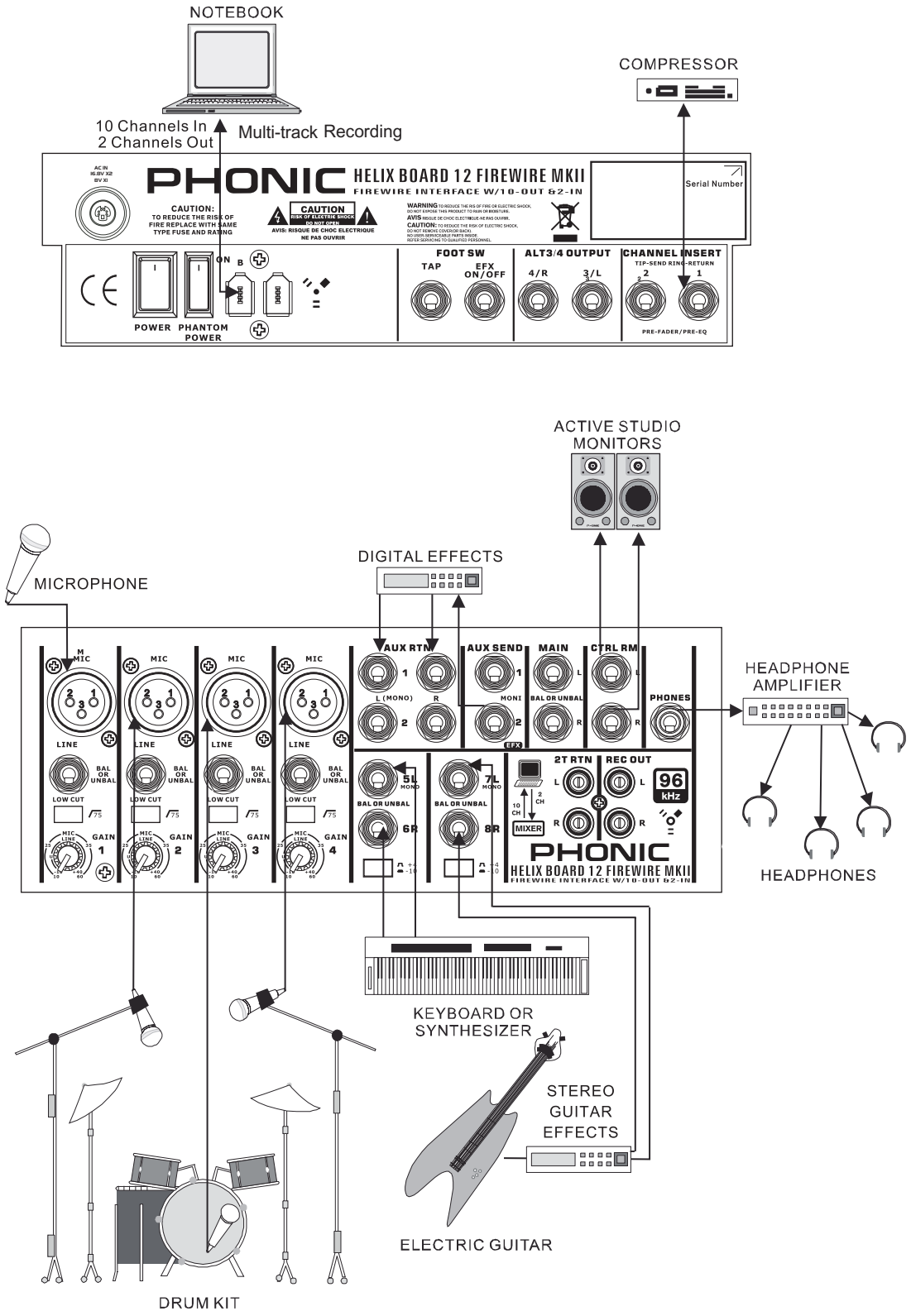
APPLICATION

Live Sound with Multi-Track Recording





Studio Recording and Monitoring

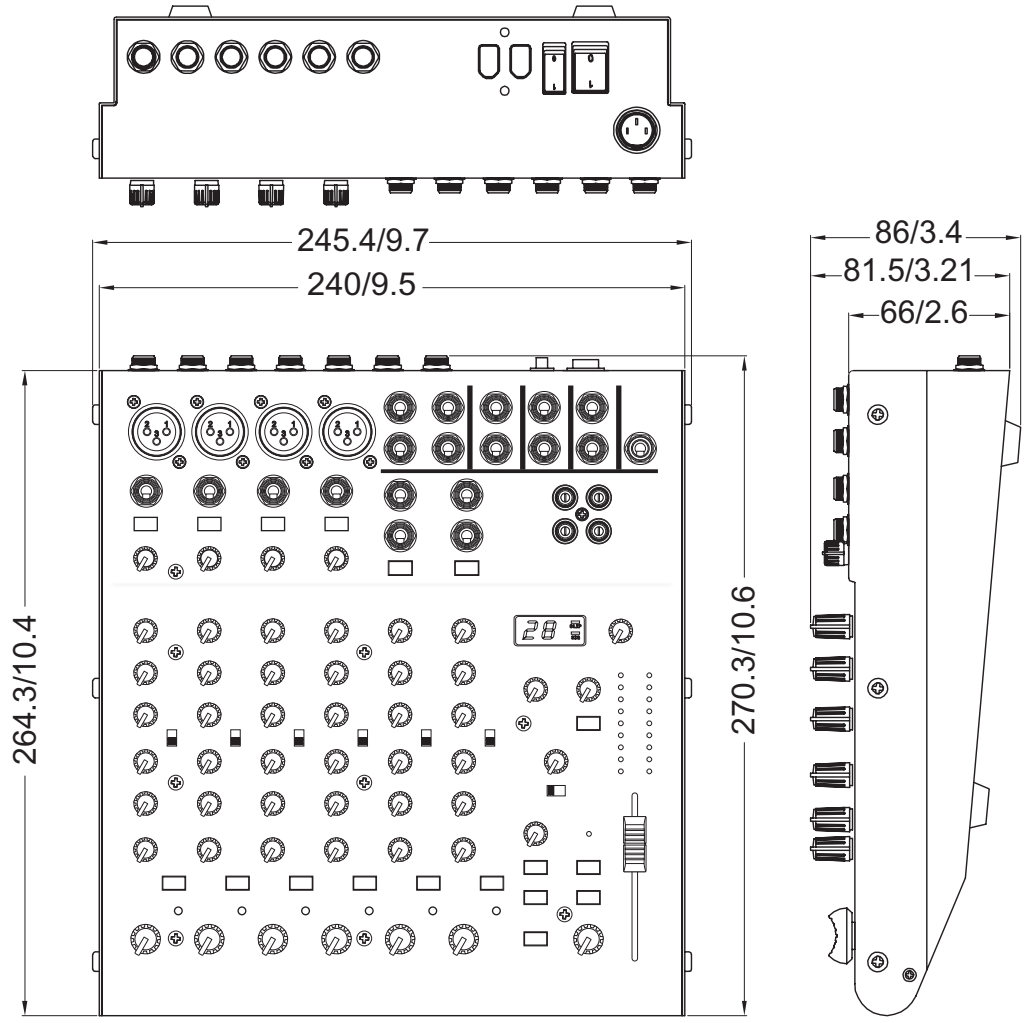


SPECIFICATIONS

	Helix Board 12 Firewire MKII
Inputs	
Total channels	6
Balanced Mono Mic/Line channel	4
Balanced Stereo Line Channel	2
Aux return	2 stereo
2T input	Stereo RCA
Outputs	
Main L/R stereo	2 x 1/4" TRS, Bal.
ALT 3-4	2 x 1/4" TS, Unbal.
Rec out with trim control	Stereo RCA
CTRL RM L/R	2 x 1/4" TS
Phones	1
FireWire Interface	10 out & 2 in, 24-bit / 96 kHz
Channel Strips	6
Insert Points	2
Aux send	2
Pan/Balance control	Yes
Volume Controls	Rotary
Master Section	
Stereo aux returns	2
Effects return to monitor	1
Control room/Phones Level Control	Yes
Faders	Main L/R, 60mm fader
Metering	
Number of channels	2
Segments	8
Phantom Power Supply	+48VDC
Switches	Master
Effect processor	100 programs plus tap delay; foot switch (effect on /off, tap)
Frequency Response (Mic input to any output)	
20Hz ~ 60KHz	+0/-1 dB
20Hz ~ 100KHz	+0/-3 dB
Crosstalk (1KHz @ 0dBu, 20Hz to 20KHz bandwidth, channel in to main L/R outputs)	
Channel fader down, other channels at unity	<-90 dB

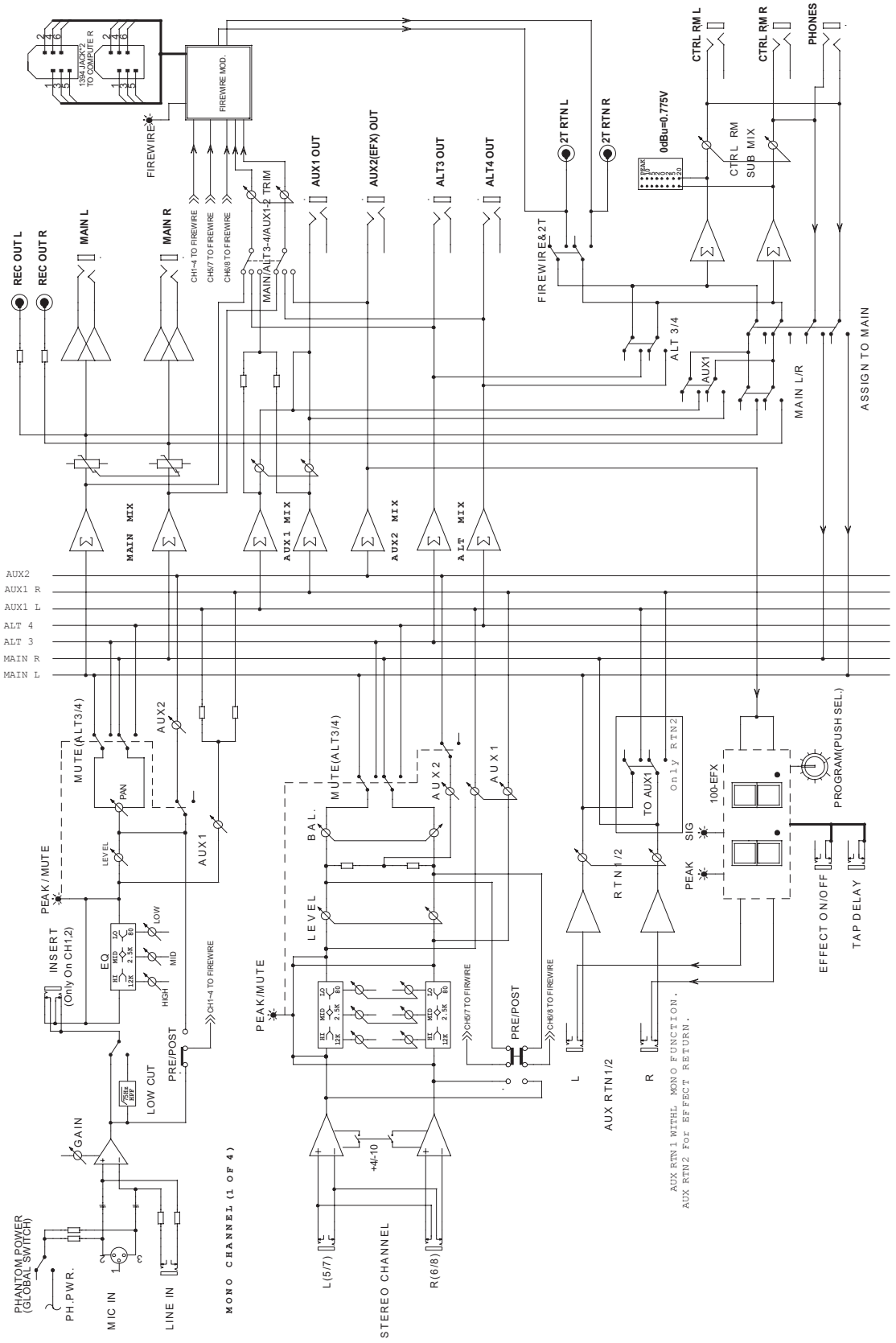
Noise (20Hz~20KHz; measured at main output, Channels 1-4 unit gain; EQ flat; all channels on main mix; channels 1/3 as far left as possible, channels 2/4 Master @ unity, channel fader down Master @ unity, channel fader @ unity S/N ration, ref to +4	 -86.5 dBu -84 dBu >90 dB
Microphone Preamp E.I.N. (150 ohms terminated, max gain)	<-129.5 dBm
THD (Any output, 1KHz @ +14dBu, 20Hz to 20KHz,	<0.005%
CMRR (1 KHz @ -60dBu, Gain at maximum)	80 dB
Maximum Level Mic preamp input All other input Balanced output	 +10 dBu +22 dBu +28 dBu
Impedance Mic preamp input All other input (except insert) RCA 2T output	 2 K ohms 10 K ohms 1.1 K ohms
Equalization Low EQ Mid EQ Hi EQ Low cut filter	3-band, +/-15 dB 80 Hz 2.5 KHz 12 KHz 75Hz (-18dB/oct)
Power Requirement (external power supply , depends on region)	100VAC, 120VAC, 220~240VAC, 50/60Hz
Net Weight	2.9 kg (6 lbs)
Dimensions (WxHxD)	245.4x86x271.3 mm (9.7"x3.4"x10.7")

DIMENSIONS



All measurements are shown in mm/inch.

BLOCK DIAGRAM



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