FIREstation

FireWire™ Recording Interface

User's Manual

VERSION 2.0

PreSonus Audio Electronics

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Presonus Audio Electronics Inc. warrants this product to be free of defects in material and workmanship for a period of one year from the date of original retail purchase. This warranty is enforceable only by the original retail purchaser. To be protected by this warranty, the purchaser must complete and return the enclosed warranty card within 14 days of purchase. During the warranty period Presonus shall, at its sole and absolute option, either repair or replace, free of charge, any product that proves to be defective on inspection by Presonus or its authorized service representative. To obtain warranty service, the purchaser must first call or write Presonus at the address and telephone number printed below to obtain a Return Authorization Number and instructions of where to return the unit for service. All inquiries must be accompanied by a description of the problem. All authorized returns must be sent to the Presonus repair facility postage prepaid, insured and properly package. Proof of purchase must be presented in the form of a bill of sale, canceled check or some other positive proof that the product is in within the warranty period. Presonus reserves the right to update any unit returned for repair. Presonus reserves the right to change or improve design of the product at any time without prior notice. This warranty does not cover claims for damage due to abuse, neglect, alteration or attempted repair by unauthorized personnel, and is limited to failures arising during normal use that are due to defects in material or workmanship in the product. Any implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this limited warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. In no event will Presonus be liable for incidental, consequential or other damages resulting from the broach of any express or implied warranty, including, among other things, damage to property, damage based on inconvenience or on loss of use of the product, and, to the extent permitted by law, damages for personal injury. Some states do not allow the exclusion of 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 form state to state. This warranty only applies to products sold and used in the United States of America. For warranty information in all other countries please refer to your local distributor.

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Limited Warranty Outside of The U.S.

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1.1 INTRODUCTION

Thank your for purchasing the Presonus FIREstation. We feel that we have created a reliable, versatile and affordable piece of audio equipment. It is designed to meet a multitude of professional digital recording applications. If you have any questions or comments in regards to this or any other piece of Presonus equipment, please feel free to contact us!

1.2 NOTES ON COMPUTER-BASED RECORDING

The Presonus FIREstation is a recording interface only. Many problems can arise when converting a standard computer into a DAW (Digital Audio Workstation). Presonus only provides support for issues that directly relate to the FIREstation. It may be necessary to contact the manufacturer of the operating system or software to obtain additional technical support. Presonus does not provide support for issues in regards to operating systems, additional hardware or software. Please check our website, www.presonus.com regularly for software, firmware, and technical support updates.

2.1 BASIC SETUP & APPLICATIONS

2.2 Computer Setup

Place the provided driver's software in your computer after powering it up. If an install wizard appears, direct it to the provided CD-ROM when prompted. If the install wizard does not appear, open the CD-ROM and run the Auto Installer from there. Follow the directions on your screen.

NOTE: It is essential that the FIREstation not be connected to the computer when the drivers are installed. If you accidentally leave the FIREstation connected, disconnect the unit, uninstall the drivers, reboot and then reinstall the drivers.

After the driver fully installs power down your computer. Turn off all external devices before connecting the FIREstation(s). Connect all external devices to the FIREstation(s). Power up the FIREstation and then connect the FIREstation to the computer using the provided 6-pin FireWire cable. Fasten your seatbelt and then power up the computer.

Three different items will be loaded on your computer at this point. The first item that is loaded is the actual software driver. The driver allows your computer to recognize and communicate with the FIREstation. A control panel is also loaded. The control panel indicates if the FIREstation is connected properly. It also indicates and helps control sample rate and clock control (sync). A patchbay is also loaded. The patchbay allows the user to route the inputs and outputs of the FIREstation in computer. It is important to note that each FIREstation has a unique Identity. So, if a FIREstation is connected and routed, that routing scheme that is saved will only work for that

specific FIREstation. If a different FIREstation is added, it will need to be rerouted.

2.3 Recording

When recording the headphone output can be used for headphone monitoring and the main outs can be used for control room monitors. This setup negates the need for an external mixer. The volume setting of the Main/Headphone outs and the Line Mixer do not affect the recording level.

2.4 Mixing

As far as the use of the FIREstation goes there are two different mix modes: Internal and External. Each mode has its benefits that are determined by your overall computer speed and capacity, familiarity with recording software, and creativity.

2.5 Internal Mix Mode
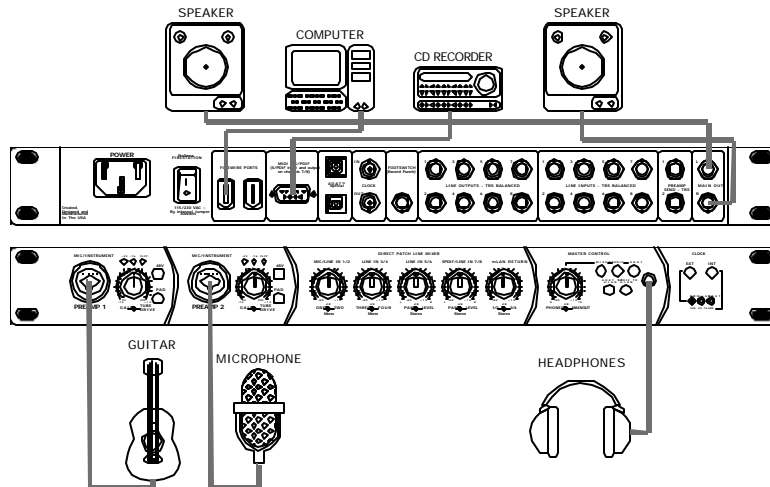
Internal mode signifies that you are using software and internal plug-ins to mix a project. In this instance only the master outputs and headphone outputs would be used. The internal mode is preferred in some situations dependent on the environment and other factors. For example, wouldn't it be nice to mix a song over headphones while sitting in a hotel room between live performances?

2.6 External Mix Mode
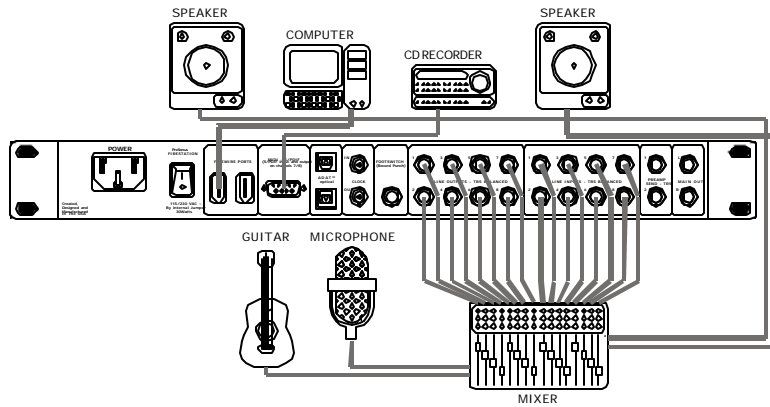
External mode incorporates other equipment beyond the FIREstation. For example, an external mixer and other processors may be used. In this mode, the outputs of the FIREstation could be routed to external equipment for dynamics processing, effects and other forms of manipulation. The master outputs could then be returned to two channels of the FIREstation to record the "Master Mix".

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2.7 Stand-Alone Mode (Special ADAT Mode)
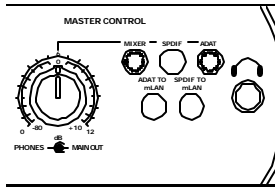
The FIREstation can be set in stand-alone mode by pressing the Mixer and ADAT buttons simultaneously. Stand-alone mode allows the FIREstation to do two main things: act as an ADAT line mixer and perform A/D and D/A conversion. The signal plugged into either the ADAT I/O will be routed to the opposite set of analog ports. For example, if a DigiMAX were plugged into the ADAT input, the same signal would be sent to the TRS outputs. The line mixer would also function, allowing the user to monitor all eight channels.

```
                    ──►Mixer
ADAT Input  ┌───────
            └───────►Line Outs

      Analog ──────►ADAT Out
```
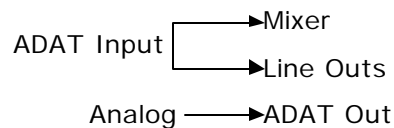
NOTE: When using the FIREstation as an Analog to Digital (A-D) converter, the line mixer does not contain the analog inputs, just the ADAT inputs.

2.8 Stand-Alone Mode (With DigiDesign 001™)
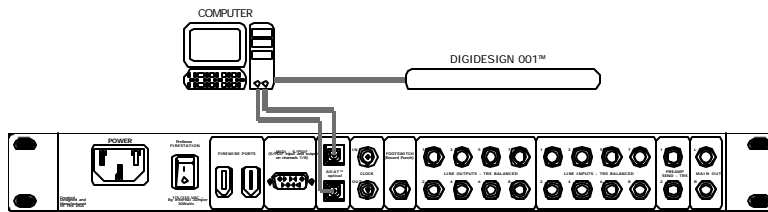
NOTE: You would want to be in ADAT special mode for this application.

2.9 ADAT Mode
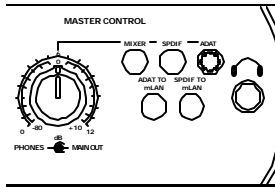
Another stand-alone mode occurs when just the ADAT button is pressed. In this mode, the FIREstation acts as an ADAT line mixer or converter. The ADAT signal can be converted to analog while being routed through the line mixer. It is important to note that the analog inputs are not functional in this mode.

```
                        ➤ Mixer
ADAT Input  ─────────── ➤ Line Outs
                        ➤ ADAT Out

Analog Inputs ────────➤ Nowhere
```
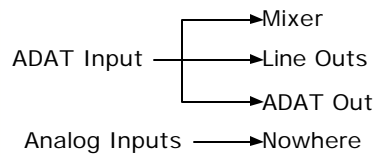
3.1 FEATURES
The following is a summary of the features of the FIREstation:

3.2 Switchable Preamps
The two preamps on the FIREstation can be switched between solid-state and tube driven. The outer knob of the preamp controls gain and the inner knob controls tube drive. The tube drive is completely disengaged when the knob is turned fully counter clockwise until the knob clicks.

3.3 Zero-Latency Line Mixer
The FIREstation utilizes an onboard line mixer that eliminates latency (monitoring delay). Every channel of the FIREstation can be routed to the onboard line mixer. The mixer can be functional whether connected to a computer or not.

3.4 Volume Control
The dual concentric volume control knob controls the amount of volume to the headphone jack on the inner knob and to the master outputs on the outer knob.

3.5 Clock Control
The FIREstation has BNC Word Clock connectors for external (slave) and internal (master) Word Clock sync. A MIDI I/O is provided for additional machine control including MTC, MMC, and MIDI. The ADAT I/O can also provide or carry Word Clock as well.

3.6 mLAN/FireWire

The FIREstation utilizes the mLAN protocol. This standard allows the unit to be connected to and share information with a multitude of digital devices. mLAN is an advanced network protocol that allows multiple FIREstations and/or other digital devices to be interconnected. Examples of these devices would be: external hard drives, digital camcorders, and synthesizers.

3.7 Footswitch Input

The footswitch input on the back of the unit allows the user to start and stop recording at any desired moment. Every different software manufacturer requires a different setup for use of this footswitch receptacle. Please consult your software manufacturers manual, website, or customer support for proper setup of this feature. The FIREstation does not come equipped with a footswitch. (The footswitch must be purchased separately.)

3.8 MIDI

MIDI stands for 'Musical Instrument Digital Interface'. However, the MIDI standard goes well beyond sequencing. The MIDI I/O allows connection or communication with external MIDI equipment. One function of this port is MIDI programming. This port can also be used for MMC (MIDI Machine Control), MTC (MIDI Time Control), and sequencing.

3.9 ADAT

The ADAT I/O allows interconnectivity between the FIREstation and devices using ADAT I/O. The fiber-optic input does not support Optical S/PDIF (two channels). The ADAT standard allows up to eight channels

of audio, at up to 24-bit 48k resolution, to be transferred
simultaneously in one direction.

3.10 S/PDIF
The S/PDIF I/O allows the FIREstation to transfer/receive audio from
other digital audio devices.

3.11 BNC
The BNC I/O is designed to allow the FIREstation to sync frame rates
with other digital devices. This sync prevents pops, clicks and
distortion.

4.1 FRONT PANEL
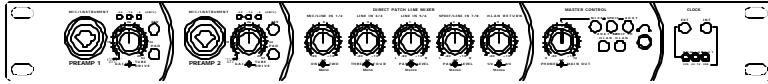
4.2 Preamps

The two preamps on the FIREstation are switchable. They can be changed between solid-state and tube driven. The tube drive is deactivated when the inner knob of the preamp is turned fully counter-clockwise. This stage is indicated by a click when the knob is turned fully counter-clockwise. The inner knob on each channel controls the amount of signal routed to the 12AX7 vacuum tube. This feature lets you control how much saturation of the signal occurs. Greater levels of tube saturation give the signal greater warmth and a richer sound or desirable distortion in extreme cases. This works equally well on mics and instruments.

NOTE: Fully engaging the tube drive may increase the noise floor.

NOTE: It is recommended that the Control Room and Headphone volumes be turned all the way down when the tube drive is initially turned on.

4.3 Inputs

Each preamplifier has a Neutrik combo connector input. The input accepts either XLR or 1/4″ instrument inputs. The 1/4″ or Hi-Z input is designed for use with a guitar, bass, etc. This input is not a line level input.

4.4 Meters

The input meters above the preamps indicate signal strength. Turning the preamps gain control too far clockwise could cause the preamp to clip. The clip indicator light will be illuminated at this point. In order to overdrive the input while still maintaining a useable recording level a compressor/limiter is needed. Several high quality compressors/limiters are available from Presonus. Some examples of these products are the BlueMAX, ACP22, ACP88, and CL44. Please refer to www.presonus.com for more details on these fine products.

4.5 +48V

Each preamp has a +48 volt phantom power switch. Phantom power is required for some microphones. These microphones are referred to as electrostatic or condenser. These microphones require an external power source in order to operate.

4.6 Pad

A −20 dB pad is provided on each preamp. The pad drops the signal by −20dB to accommodate higher level (louder) signals. The pad is especially useful when using microphones that require phantom power.

NOTE: Often times phantom powered microphones produce a higher level (louder) output, which is why the pad is useful when using these (phantom/condenser) microphones.

4.7 Zero-Latency Line Mixer
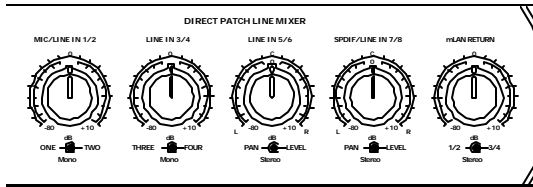
All 12 channels of the line mixer are routed directly to the Headphone/Main Output volume control knobs/outputs. Every two/four (according to the signal designation) channels are grouped together sequentially to one dual concentric knob.

4.8 Channels One-Eight

The first two knobs allow for independent channel volume control without panning (one and two, three and four). The amount of volume given to each channel dictates the amount of volume to the headphone/main out. The second two knobs group the channels in stereo pairs (five and six, seven and eight). The inner part of the knob controls the amount of signal (volume) that goes to the headphone/main control and the outer ring controls panning. Each pair of channels is routed directly to the headphone/main outputs. Therefore, the FIREstation can be used as a line mixer without connection to a computer. There is no latency or delay between the time the signal hits the respective input and goes to the headphone/main output. This routing scenario ensures that what is heard through the headphone/main output is occurring at exactly that moment.

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4.9 mLAN Return

The last knob of the FIREstation line mixer is dedicated to channels assigned to the unit by the computer. These channels are the channels routed to outputs one-four (TRS line out) on the FIREstation. These knobs differ from the others in that there is no pan assignment. The outer ring controls the line mixer volume of returning channels one and two and the inner ring controls the returning channels volume of three and four. The computer dictates panning on this dual concentric knob. If channels are not routed to the FIREstation by the computer, they will not be able to be monitored by the line mixer from either output.

NOTE: The speed of the computer will determine the amount of signal delay (latency) to these inputs. If a significant amount of delay is noticed, the computer or software manufacturer may need to be consulted to improve performance.

When the S/PDIF input is selected, it is automatically routed to channels seven and eight. It is not possible to route this pair of inputs to any other input channels. This is similar to when the ADAT input is engaged. When the ADAT input is selected, it occupies channels one through eight. The analog and S/PDIF inputs are not useable at this point. This feature is especially useful when using the DigiMAX or DigiMAX LT (microphone preamplifiers manufactured by Presonus) on the ADAT input. This feature eliminates the need for external mixing equipment.

The last channels on the line mixer are reserved for two to four channels returning from the computer. These channels allow you to

monitor what you have already recorded in conjunction with what is currently being recorded. The signals sent to these four channels are set on the computer itself. These channels are the physical channels that are returned to the FIREstation from the computer. These returns would be FIREstation outputs one-four. It is also important to note that when in ADAT/Stand Alone mode that mLAN returns three and four are not active.

NOTE: These two pairs (FIREstation outputs one-four) of channels cannot be reassigned using the FIREstation itself. Any channel redistribution must be configured using the host software or operating system.

4.10 Master Control
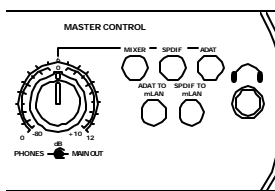
The DIGITAL section of the faceplate of the FIREstation refers to clock control. Clock control is necessary to provide stability in recording digital material. Word Clock is the common protocol used for synching digital audio recording devices. Word Clock ensures that different devices maintain the same recording frame rate. This frame rate protocol prevents digital dropout, clicks, pops, and distortion.

The FIREstation has two different clock modes, INT (internal) and EXT (external). The internal option allows the FIREstation to stand alone or be the master. When using the INT mode, other digital devices could

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be synched to the FIREstation by either using the BNC Word Clock output, the ADAT output, or the FireWire output. The EXT mLAN mode causes the unit to be synched to the computer. This mode is especially useful when recording with multiple FIREstations. The other EXT modes would sync the FIREstation to other digital devices either by the BNC in, or the ADAT in.

NOTE: S/PDIF external sync is not necessary because the (S/PDIF) input signal is resampled and realigned by the FIREstation.

4.11 Headphone/Main Out Control

The headphone/main out control respectively controls the two outputs independently. The inner ring controls the HEADPHONE volume and the outer knob controls the MAIN OUT volume. The audio content of both volume controls is dependent on the routing and volume settings of the line mixer. It is strongly recommended that the volume of both of these outputs be lowered completely when engaging the tube drive, connecting or disconnecting external equipment or when powering up the unit.

NOTE: If a signal is not routed to the line mixer, it will not be present in either headphone/main out signal output.

4.12 Mixer

The MIXER button engages the line mixer. If this button is not engaged, only mLAN return channels one and two will be present in the Headphone/Main out mix. All other functions of the mixer will be disabled.

NOTE: if the mixer button is not engaged, the computer sets the
volume of mLAN returns one and two. In other words, the mLAN
return knob (potentiometer) is inactive (non-functional).

4.13 S/PDIF

The S/PDIF button switches channels seven and eight so that they
accept the S/PDIF input rather than the 1/4″ TRS in or ADAT In. This
button assigns the S/PDIF inputs to channels seven and eight of the
line mixer.

4.14 ADAT

The ADAT button assigns the ADAT input signal to the line mixer and
to the TRS outputs as well. This button essentially defeats the TRS
inputs to the mixer and mirrors the ADAT input on the TRS outputs.
The ADAT button has other uses as well. Please refer to the Basic
Setup And Applications section of this manual for further details.

4.15 ADAT To mLAN

The ADAT to mLAN button routes the ADAT input to the mLAN output
going to the computer.

4.16 S/PDIF To mLAN

The S/PDIF to mLAN button activates the S/PDIF input. This button
routes the S/PDIF input to the computer, replacing channels seven and
eight. The S/PDIF button has other uses as well. Please refer to the
APPLICATIONS section of this manual for further details.

4.17 Clock
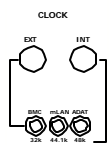
4.18 External Control (Slave Mode)

When the FIREstation is set to EXT, Word Clock is determined or set
by an external device. The three external controllers are BNC, mLAN,
and ADAT.

4.19 BNC

The FIREstation can be synced to another digital device by using the
BNC input. The BNC output could also be used to control other devices
by Word Clock. For example the DigiMAX and DigiMAX LT (preamps
made by Presonus) use BNC outputs to send Word Clock to other
devices for sample accurate recording.

4.20 mLAN

mLAN would be the most common clock mode for the FIREstation. This
allows the computer to be the master clock. Word Clock is then
transferred to external devices via FireWire or BNC. The sampling rate
would be set in the mLAN control panel. Currently, mLAN protocol uses
two sampling rates: 44.1kHz and 48kHz.

*NOTE: All other clock modes allow the use of the 32kHz sampling rate,
even though mLAN does not.*

4.21 ADAT

ADAT mode would slave the FIREstation(s) to an external device that utilized an ADAT optical output. The unit would automatically sync itself to the sampling rate of the external device. The ADAT mode would most likely be used when a BNC output is not present on the external device.

4.22 INT

Three different sample rates are available. These rates are 32k, 44.1k, and 48k. The higher the resolution, the more hard drive space required. For example, one minute of stereo recording at 44.1kHz requires 10 MB of hard drive space per minute.

NOTE: The FIREstation always records at a 24-bit resolution. In order to record at a lower resolution, the software has to be set to dither or truncate the incoming recording signal.

4.23 Buttonology Notes

If the EXT clock <u>button</u> blinks, then no clock is present for the FIREstation to be slaved to the external device.

If the <u>LED</u> for Sample rate/external device blinks, then signal is out of the sampling range.

5.1 BACK PANEL

5.2 IEC Power Connector

Please pay close attention before plugging in your FIREstation for the first time. Make sure that the voltage printed on the unit matches that provided by your country or region.

5.3 Power On/Off

The Power on/off switch controls power to the FIREstation. It is strongly recommended that the unit be powered off between uses.

5.4 FireWire/IEEE 1394 I/O

The IEEE1394 ports are 6-pin connectors. Both ports are bi-directional. They send and receive data from the other interconnected devices. IEEE 1394 compatible devices such as keyboards, computers, camcorders, etc. may be connected to the FIREstation using these ports.

5.5 MIDI And S/PDIF Port
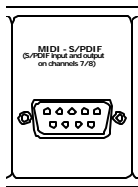
An external breakout cable is provided with the FIREstation to provide MIDI I/O and S/PDIF I/O. The S/PDIF I/O accepts a coaxial plug and does not accept an optical plug without a converter (coaxial to optical and vice-versa).
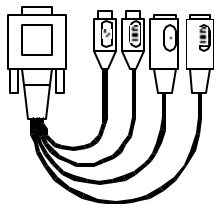
All signals that are sent to the S/PDIF input of the FIREstation do not need to carry Word Clock. The input S/PDIF signal is re-sampled, therefore (in this instance) the FIREstation can remain in the present Clock mode and BNC cables are not needed. However, this is not the case with signals sent from the Firestation's S/PDIF outputs. Word Clock signal can be sent either by BNC or S/PDIF. Correct Word Clock

sync can prevent pops, clicks or distortion on external recording devices (such as mini-disk recorders, DAT recorders, or CD Recorders).

5.6 MIDI Daisy-Chain Example
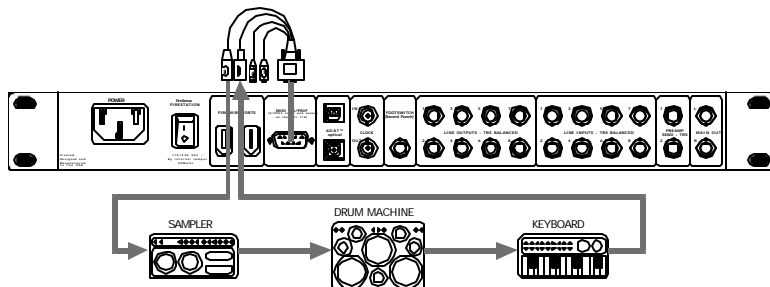
5.7 ADAT

The ADAT I/O allows interconnectivity between the FIREstation and devices using ADAT I/O. The Fiber optic input does not support Optical S/PDIF (two channels). The ADAT standard allows eight channels of audio, at up to 24 bit 48k resolution, to be transferred simultaneously.

5.8 BNC
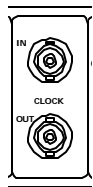
The BNC I/O is designed to allow the FIREstation to sync frame rates with other digital devices. This sync prevents pops, clicks and distortion.

5.9 Footswitch Input

The footswitch on the back of the unit allows the user/engineer to start and stop recording at any desired moment. Every different software manufacturer requires a different setup for use of this footswitch receptacle. Please consult your software manufacturers manual, website, or customer support for proper setup of this feature. The FIREstation does not come equipped with a footswitch, it must be purchased separately.

NOTE: The footswitch operates on Channel 16 with Controller 23 with the Value set to 127.

5.10 TRS Line Ins/Outs
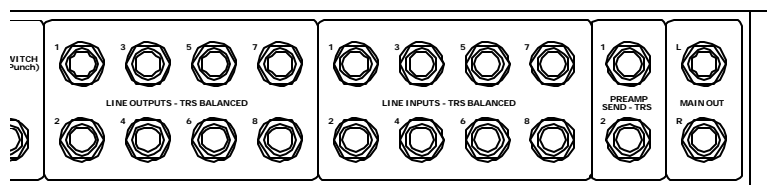
The TRS inputs and outputs are designed for use with balanced or unbalanced 1/4″ cables. Balanced cables have an extra conductor and allow a signal to be sent over a longer distance while maintaining a lower noise floor. The TRS line inputs for channels one and two take precedent over preamp channels one and two. This is done so that another device may be placed between the preamp sends and the TRS line inputs.

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5.11 TRS Preamp Sends

The TRS sends are designed for use with balanced or unbalanced 1/4"
cables. The sends are direct outputs from the preamp that allow an
external dynamics processor to be placed in the signal chain. For
example, a BlueMAX or similar compressor could be wired in place
between the sends and any of the FIREstationin puts. Proper attention
must be paid so that the sends from the preamp are connected to the
inputs of the external device and the outputs of the device are
connected to the inputs of the FIREstation.

5.12 Main Out

The Main outs are designed for use with Control Room Monitors. The
line mixer dictates the content and volume of these outputs.

6.1 TOP PANEL

6.2 Analog To Digital Converter Line Level Adjust
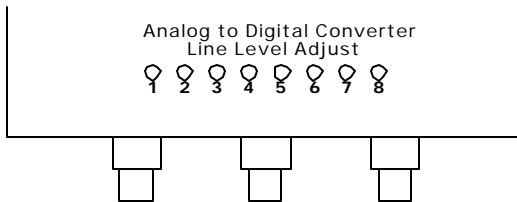
There is typically a 14dB difference between the 0dB reference levels
in analog and digital equipment. The line level adjust on the
FIREstation allows the user to adjust the 0dB reference to match that
of an external analog device such as a preamp or console. A tweaker
or small Phillips screwdriver can be used to adjust this level. Turn the
tweaker clockwise to raise the 0dB level and counter-clockwise to
lower the level.

*For example: If you were running a Presonus M80 into your
FIREstation, you may notice that you could go into the red on the
M80's meters while the recording software would maintain a relatively
low recording level. You could adjust the FIREstation converters so
that the software would have the same meter reading as the M80.*

6.3 Heat Vent
The FIREstation has three heat vents. The vent on the top of the unit
is directly over the power transformer. It is strongly recommended
that there be at least one rack space open above the unit for proper
cooling. Anything placed directly on top of any of the three vents could
cause the unit to overheat and malfunction.

7.1 SOFTWARE

7.2 Operating Systems

The FIREstation is designed for use with Windows XP and Macintosh OS 9.x. Other operating systems are not currently supported by Presonus or Yamaha.

7.3 Recording Software

The FIREstation currently utilizes ASIO drivers for multi-channel recording/playback and WDM drivers for stereo recording/playback. Please check that your recording software utilizes the appropriate drivers for the specific application. To toggle between ASIO and WDM mode use the provided Yamaha mLAN control panel. To change into WDM mode, simply check the WDM box on both the send and receive side of the control panel. It is also necessary to hit the APPLY button in the patchbay after switching between drivers. In WDM mode the computer will recognize inputs/outputs one and two.

NOTE: If you change anything in the control panel or patch bay you must hit the APPLY button in the patch bay. Otherwise your changes will not take effect.

8.1 TROUBLESHOOTING

8.2 The ADAT Input/Output Doesn't Support Optical S/PDIF
The ADAT input/output does not support optical S/PDIF. Optical
S/PDIF is characterized by utilizing two channels, rather than eight.
S/PDIF is carried by a pair of coaxial (RCA-style) plugs on the breakout
cable.

**8.3 Pops, Clicks, And/Or Distortion Are Present In The Audio
Signal**
Pops, clicks and distortion on the fiber optic I/O may be caused by
Word Clock discrepancies. Word Clock problems arise when the digital
frame rates of two devices are not aligned. In order for two or more
digital devices to be properly aligned only one device can be set as
master. Word Clock allows other deices to be synced or ' chained' to
this device. In other words, the 'chained' devices are set as slaves.
(Similar to a MIDI daisy-chain). The BNC connectors allow one unit to
be slaved to another unit, which is one way to sync two or more digital
devices. Another way to sync digital Word Clock devices is through the
Word Clock signal that is carried either by the S/PDIF I/O or the ADAT
I/O.

**8.4 ADAT I/O Cannot Be Used In Conjunction With The Line Or
S/PDIF I/O**
The ADAT I/O cannot be used at the same time as the line or S/PDIF
I/O. For example, ADAT channels one-six and S/PDIF cannot be used
simultaneously. However, you can use the ADAT inputs and the Line
outputs at the same time. In this instance the line outputs will mirror
the ADAT inputs.

The S/PDIF Inputs Cannot Be Routed to Other Channels on the Line Mixer

By default, the S/PDIF I/O is ALWAYS assigned to channels seven and eight. This cannot be changed.

8.5 The Preamps Noise Floor Is Higher When The Tube Drive Is Engaged

Engaging the tube drive could increase the amount of noise in the source signal. Turning up the tube drive and the gain simultaneously could also increase the noise floor. However, mixing the amount of tube drive and preamp gain can create interesting effects and sounds.

8.6 mLAN Returns Three And Four Do Not Work In ADAT Mode

mLAN returns three and four are not useable when in ADAT or in stand alone mode. All return channels must be routed to channels one and two in order to be monitored.

8.7 Word Clock Synchronization (Sync)

If you experience pops, clicks or distortion while recording it may be due to incorrect Word Clock sync. Only one device can be the master and all the rest must be slaved. For most applications, the computer will be the master. In this instance, the FIREstation will be set to EXT and mLAN. If the ADAT output of the FIREstation is connected to another device such as a digital mixer, it is recommended that the BNC output be connected to the BNC input of the receiving device (in this case the external digital mixer).

8.8 MIDI

If your FIREstation's MIDI I/O does not function or functions irregularly, please first check that all cables are connected properly. It may also be necessary to check the integrity of the cable as well. Please also check the MIDI channel of each connected device. If the channel setting of the sending and receiving device does not match, MIDI information will not be properly sent/received. Also check to insure that MIDI is connected in the patch bay.

Presonus does not provide support for issues in regards to operating systems, additional hardware or software. Please check our website, www.presonus.com regularly for software, firmware, and technical support updates.

8.9 Footswitch

The footswitch operates on Channel 16 with Controller 23 with the Value set to 127.

8.10 Latency

If a doubling effect or extreme delay is noticed on a signal that is currently being recorded, it may be necessary to alter/disable the monitoring setup in the recording software. A quick solution to this problem would be to lower the levels of the mLAN return that the signal is routed to.

In the instance that there is a delay in playback, the recording software may need to be modified to achieve better performance. Another factor in playback latency is the speed of the computer. The

computer/software manufacturer may need to be contacted for performance issues.

8.11 Drivers
Currently the FIREstation supports multi-channel recording/playback utilizing ASIO drivers. If your recording software does not recognize the FIREstation either the driver hasn' t been loaded properly or the recording software requires the user to run a separate setup/profiling application.

WDM drivers are currently provided for stereo use ONLY. The computer will solely recognize Inputs/Outputs one and two.

Presonus does not provide support for issues in regards to operating systems, additional hardware or software. Please check our website, www.presonus.com regularly for software, firmware, and technical support updates.

8.12 Operating Systems
The FIREstation is designed for use with Windows XP and Macintosh OS 9.x and higher. Presonus or Yamaha does not currently support other operating systems.

8.13 Non-Presonus FireWire/mLAN Devices
Other FireWire devices are not covered by the Presonus warranty or technical support. It may be necessary to contact the devices manufacturer or retailer for added assistance or technical support.

8.14 Line Mixer Doesn't Work When Using FIREstation As Stand-Alone A-D

When using the FIREstation as an Analog to Digital (A-D) converter, the line mixer does not contain the analog signal.

8.15 The EXT Button Is Blinking

The External If the EXT clock button blinks then no clock is present for the FIREstation to be slaved to.

8.16 The Sample Rate LED Is Blinking

If the LED for Sample rate/external device blinks, then signal is out of the sampling range.

8.17 S/PDIF Feedback Loop

If you connect the S/PDIF input to the S/PDIF output you will create a feedback loop. In other words you will hear some strange stuff.

9.1 TECHNICIAL SPECIFICATIONS

Preamp Bandwidth ....10Hz to 50kHz

Preamp Input Impedance ....1.3k Ohms

Instrument Input Impedance..2M Ohms

Preamp THD..0.002%

Residual Noise Floor..-96dBu

Preamp Gain 70dB

TRS Input Impedance ....10k Ohms

TRS Input Nominal Level .... +4dBu

TRS Output Impedance 51Ohms

TRS Output Nominal Level .... +4dBu

TRS Main Outputs Impedance... 51 Ohms

TRS Main Outputs Nominal Level....................................... +4dBu

Headphone Output 100mW 20-20k

Preamp Pad... 20dB

Phantom Power.. 48V +/- 2V

Meter...-20dBu, -10dBu, Clip at +18dbu

Internal Supply.. Linear

Analog to Digital Converters........................... 24-bit / 44.1K or 48K

ADC Dynamic Range...107db

DAC...24-bit / 44.1K or 48k

DAC Dynamic Range...107db

DAC Noise Floor .... -96dB

Internal Word Clock Jitter.. Ultra-Low

mLan™ Speed 200mbps