

# GENZ·BENZ



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## OWNERS MANUAL

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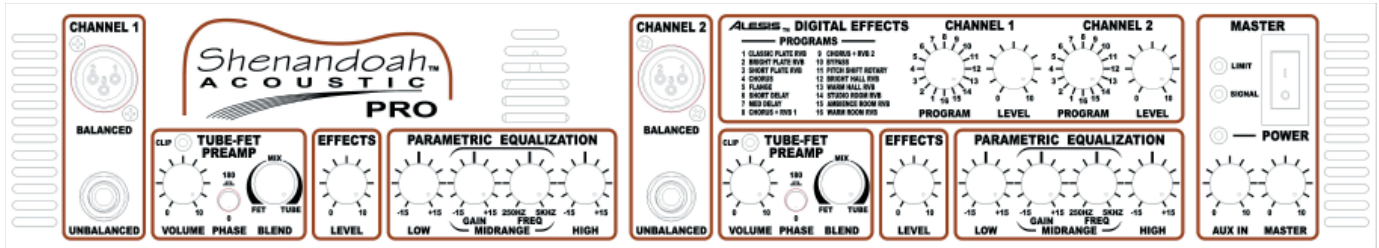


**PRODUCT DESCRIPTION** – The **Shenandoah™ Acoustic Pro** is a two channel – 4 input, professional 200 watt acoustic instrument amplifier with two blendable preamps per channel—FET and 12AX7 Tube. This compact, light-weight combo also features two digital effects processors – one for each channel. The powerful output of the amp is handled by its advanced 300 watt, 12” Neodymium loudspeaker, providing full-bodied, efficient, articulate acoustic output.

Each channel of the preamp is equipped with both a ¼” unbalanced line input and an XLR balanced microphone input (with Phantom power). The two inputs on each channel are summed (mixed) together at a 1:1 ratio. Each channel then passes through independent 3 band equalizers with a sweepable midrange frequency band. This powerful equalizer circuitry was developed specifically for use with acoustic instruments and offers maximum flexibility in tone shaping and feedback control. A Phase Switch is also provided to enhance the acoustic flexibility and response.

The advanced design of the FET/TUBE preamp, 200 watt power amp and light-weight cabinet design are further augmented by a full-featured rear panel which offers three direct balanced outputs with ground lift switch, 3 unbalanced line outputs, effects loop, effects cancel jack, aux. input section and extension speaker jacks. The power platform is a stout 200 watts into the internal 12" speaker OR it can be switched to deliver its full 200 watts into the combo speaker and two additional 8-ohm extension cabinets.

The **Shenandoah™ Acoustic Pro** has redefined the standard in acoustic amplifiers for years to come.



## FRONT PANEL

**INPUTS** – The Shenandoah™ Acoustic Pro is equipped with two types of input jacks. The ¼" input is unbalanced and “line/instrument level” with a useable sensitivity from 50 mV to 1 volt. The input impedance is 150 k ohms. The ¼" input will also accept most active balanced line sources, automatically unbalancing them by recognizing the tip portion of the balanced signal. Additionally, the precision input scaling preamp contains a 45 Hz, 12 dB/octave high pass filter (more effective and less intrusive than the more common 6 dB filters) and an “RFI” filter (radio frequency interference) to eliminate unwanted noise. The XLR input jack is balanced and “microphone level”, with a useable sensitivity from –60dBv to –30 dBv. It contains a precision full range differential microphone preamp with phantom power. For use with higher-level sources (such as the balanced line level output from a keyboard), a balanced pad network will be necessary to use the balanced input.

**PHANTOM POWER** – An internal phantom power source (13.6 volts) is provided for use with condenser mics. This power source is on at all times and does not affect the standard operation of the amp, even when a condenser mic is not used. We use the DIN 45-596-P12 volt standard which will operate virtually all of the live sound reinforcement condenser microphones on the market. Some “boutique” externally biased condenser mics will not be compatible and will require 48 volt phantom power. *We suggest live sound condenser mics by: AKG (C4500B, 4000B , etc.), Audio Technica (AT3035, 3032, Pro Series ,etc.), CAD, Shure and Crown.*

**PREAMP GAIN CONTROL** – This level control sets the amount of gain at the Input of the Preamp. Use this control to set the input level in conjunction with the overload LED indicator.

**INPUT CLIP LED** – The Red Clip LED senses the input signal to the preamp section and warns of input overload. For the cleanest signal possible this LED should only flash with the strongest signal peaks. Adjust this sensitivity with the input gain control.

**PHASE SWITCH** – Each input is provided with a phase reverse switch. By reversing the phase of the input signal, feedback tendencies can be reduced if caused by sympathetic vibrations between the speaker and the instrument. Under some conditions, changing the phase can drastically improve the output from the amplifier and can improve the playability of some instruments.

**FET/TUBE PREAMP BLEND CONTROL** – Each input channel is provided with a preamp blend control, which adjusts the balance of the input signal between the FET and 12AX7 TUBE preamp. The FET preamp produces smooth, articulate, pristine response while the TUBE preamp enhances the acoustic guitars timbre with the warm tonal characteristics of the TUBE but without distortion when driven hard. It will be helpful to experiment with this blend control to find the position that best suits your desired tone. The ability to choose or mix these two preamps is a unique and exceptional feature of the Shenandoah™ Acoustic Pro amplifier design. **Note: From a cold start, it will take 7—10 seconds for the tube to warm up and pass audio.**

**COMBINING XLR & 1/4" INPUTS** – A unique feature of the Shenandoah™ Acoustic Pro is the ability to mix the XLR balanced and 1/4" unbalanced inputs on each channel. In many situations, this effectively makes the amplifier function as a 4-channel amplifier. The most effective way to use this feature is to set the volume on the channel using the XLR microphone input and then adjusting the level control on the instrument itself (assuming that it has one) to blend levels between the two inputs. Equalization will be common to both inputs on the channel.

**ON-BOARD ALESIS™ DIGITAL EFFECTS** – The Shenandoah™ Acoustic Pro contains two genuine Alesis™ 15 program digital effects processors. Unlike other amplifier manufacturer’s built-in digital effect units, we chose to use an industry leader in processing with an undisputed reputation for realistic, high quality effect algorithms. Not all effects will be suitable for all types of instruments or playing styles, but everyone should find a good selection of solid, useable programs. Just keep in mind that a program that doesn’t work well for your quick acoustic guitar or mandolin work (long lush reverbs for example) may be the perfect program for jazz guitar, sax or flute. Effects volume differences are normal when switching between different effects programs. Adjust the effects send and master levels accordingly.

One of the most powerful features of the Alesis™ DSP engine is its ability to process a large amount of audio data in real-time. This allows us to take advantage of several important concepts in generating a believable acoustic image. By delaying a portion of the signal by an “early reflection ratio”, applying DSP processing to this signal, then summing it back with the original signal and returning the mix to the program bus, the resulting sound is big, lush and exceptionally stable. A 1/4" TRS effects cancel jack is provided on the back panel to mute the internal effects via footswitch. Any standard 2-button latching footswitch may be used. The effects signal is muted when the switch is closed, shorting tip (or ring) to sleeve.

**PROGRAM DESCRIPTION**

Name	Description
Hall 1	Bright hall reverb
Hall 2	Warm hall reverb
Room 1	Hardwood studio reverb
Room 2	Ambient room reverb
Room 3	Warm room reverb for guitars and rhythm instruments.
Plate 1	Classic plate reverb for lead vocals and instruments.
Plate 2	Sizzling bright plate reverb for vocals.
Plate 3	Short "vintage" plate reverb
Chorus	Chorus (Tonal variations in pitch and volume)
Flange	Flanger for jet wash effects.
Delay 1	125ms slapback delay
Delay 2	190ms slapback delay
Chorus/Plate	Chorus with reverb plate
Chorus/Room	Auto-wah guitar effect with reverb
Bypass	No effect
Rotary Speaker	Rotary speaker emulation

**ACTIVE 3 BAND EQUALIZATION** – Each channel of the Shenandoah™ Acoustic Pro contains a separate 3 band (with sweepable mids) active equalizer. These equalizers, similar to those found on professional sound consoles, are very useful tools when used correctly.

**LOW FREQUENCY EQ** - The corner frequency of the low frequency section is 85 Hz, with a shelving curve type and provides cut or boost of 15 db. This frequency is particularly handy when dealing with low frequency feedback from a big dreadnaught guitar, cello or upright bass. With a “boomy” instrument on a small stage, a combination of volume reduction and turning down the low frequency control will generally get good results. The low frequency control is also handy for adding some “bottom” to a baritone sax and “chunk” to many stringed instruments.

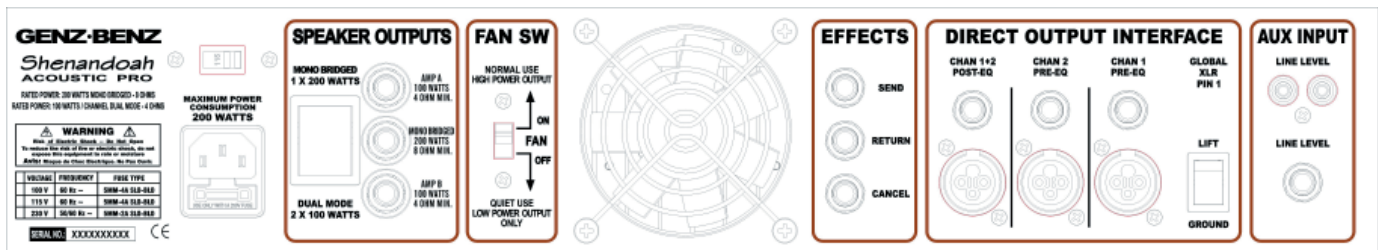
**HIGH FREQUENCY EQ** - The corner frequency of the high frequency section is 8 kHz, shelving curve type and provides cut or boost of 15 db. This frequency is especially useful for taming the bright harshness of some mandolins, violins, brass and reeds. It can also be used to help acoustic guitars, cellos and flutes cut through other players in loud club situations, or where drums are present.

**MIDRANGE EQ** - The “sweep mid” section features an independent midrange equalizer, peaking curve type, with over 12 dB of cut or boost and a bandwidth approximately 1 octave wide. The center frequencies of these equalization filters are continuously user adjustable from 250 Hz to 5kHz with the corresponding frequency control. These filters are typically (but not always) used to reduce or remove offending frequencies in the instrument’s pick-up response. Removing only the minimum amount necessary will yield the most acoustically rewarding results. The easiest and most repeatable way to determine the offending frequency range is to boost the mid level somewhat (but not to the point of feedback) and while playing, sweep the frequency control slowly across its range. You may need a third hand until it becomes second nature, but soon you will find out just how quick it can be. You will hear a clear and obvious accentuation of the “ugliness” you wish to remove. Then, reduce the gain control until the sound you desire is attained. The ear is a most sensitive and discriminating piece of test equipment when used in this manner — another good reason to protect them! This is the way many touring sound engineers equalize, since it is quick, accurate and repeatable. Occasionally, you will find need to use the mid section in “boost” mode, particularly common when adding higher midrange (bite) to an otherwise dull instrument, or adding low mid “body” to an otherwise thin sound. Spend some time experimenting so that the process becomes creative as well as corrective.

**AUXILIARY INPUT LEVEL CONTROL** – The Shenandoah™ Acoustic Pro is equipped with both ¼” and dual RCA aux. input jacks and aux. level control. These rear panel jacks are internally summed, and feed the stereo mix via the aux. level control. Both aux. inputs are line level, for use with drum machines, CD, MP3 and tape players.

**MASTER VOLUME** – The master volume control adjusts the overall volume of the mix of channel 1, channel 2, aux. input and effects return. Typically, best results are obtained when this control is operated between the 9:00 and 3:00 positions.

**MASTER STATUS LED INDICATORS** - Output status LED’s are provided to indicate Signal present and Clipping. The green LED monitors the Pre-Master Volume output signal from the preamp before the power amp section. The red LED indicates Clip/Limit and indicates that the maximum power threshold has been crossed and the internal “soft-clip” limiter is active. Driving the amp 6db beyond this point will cause gradual clipping.



## BACK PANEL

**SPEAKER OUTPUTS** - Three speaker outputs are provided that work in conjunction with the Mode switch for flexible power distribution to the speakers. With the Mode switch in the Mono Bridged position only the bridged speaker jack is active. This jack delivers the full 200 watts of power from the amplifier into a single 8 ohm load. This is where the combo’s 8 ohm 12” speaker is plugged in from the factory. With the Mode switch in the Dual position only, the Dual speaker jacks are active. It is possible to drive external speakers with the amp A output and the internal speaker with the amp B output when using the Dual mode position. Driving speaker loads below the rated minimum loads (8 ohms min. bridged mode; 4 ohms min. dual mode) will result in distortion and possibly intermittent operation as the protection circuits are activated. We offer the Shen-200-EXT L/R speaker enclosures that are a matched pair of Left and Right imaged extension speakers that offer a 10” woofer and compression tweeter for use with either the Shenandoah™ Stereo Delux 200 or the Shenandoah™ Acoustic Pro.

**FAN COOLING/FAN SWITCH** – The Shenandoah™ Acoustic Pro features internal fan cooling for maximum heat exhaust through the front panel vents. A switch is provided so that the fan can be turned off for those times when using the amp for low power use in quiet environments (example: bedroom practice, studio recording, quiet church performances). The fan should be in the normal “ON” position for any use other than the most quiet.

**EFFECTS LOOP** – The Shenandoah™ Acoustic Pro is equipped with an effects loop insert point into the main amplifier signal path. This loop is useful for inserting compressors and dedicated digital effects processors. The signal is line level and unbalanced.

**EFFECTS JACK** – A ¼” TRS effects cancel jack is provided on the back panel to mute the internal effects via footswitch. Any standard 2-button latching footswitch may be used. The effects signal is muted when the switch is closed, shorting tip (or ring) to sleeve.

**DIRECT OUTPUTS** – The Shenandoah™ Acoustic Pro contains the most comprehensive direct output section available on any acoustic instrument amplifier. The XLR balanced and ¼” unbalanced outputs make “real world sense” when connecting with other equipment. The ¼” unbalanced outputs are true professional line level (+4 dbv) with an output impedance of 1k ohm, and can drive virtually any line level input, including power amplifiers. The XLR balanced output is “hot” Mic level, rated at –30 dBv. This configuration allows the Shenandoah™ Acoustic Pro to drive very long cable lengths (250+ feet) without problems or added noise and is compatible with all commonly encountered mixing consoles. The XLR balanced direct outputs can be “ground lifted” with the global ground lift switch. This switch lifts pin 1 on all of the XLR balanced outputs to break any ground loops between the Shenandoah™ Acoustic Pro and a PA system (or recording) console. Direct outputs are provided for each channel, pre eq, pre effects, post channel volume (to take advantage of the dual summing inputs on each channel), and for the mixed output, post channel eq, post effects, and pre master volume (to aid in sending a “finished” mixed signal to a PA system, power amplifier or powered speaker).

**POWER AMPLIFIER** – The Shenandoah™ Acoustic Pro is equipped with our DUAL OUTPUT DESIGN, which contains two separate advanced monolithic power amplifier circuits that are completely protected against overloads, short circuits and thermal faults. The output is rated at 100 watts per channel into 4 ohms (dual mode) and 200 watts into 8 ohms (bridge mode), with excellent overload recovery characteristics. A unique feature of this amplifier is the “on silicon” temperature sensor that automatically tracks and adjusts the amplifier’s operating and protection parameters, a very cool feature that increases product reliability 10-fold over conventional designs. A switched internal cooling fan is provided for maximum heat exhaust through the front panel vents.

**POWER INPUT** – The Shenandoah™ Acoustic Pro is shipped from the factory with a standard IEC type power inlet connector and the appropriate power cable for the market the amplifier was shipped to. The power transformer is universal input (115/230 volt, 50/60 Hz) with a voltage selector switch located above the inlet connector. Be sure that this switch is in the correct position (matching your local power system) BEFORE connecting the Shenandoah™ to the power source. There is an AC mains fuse (with a spare fuse included) located in the small slide out tray on the IEC power inlet connector. Always replace with the correct value fuse as indicated on the fuse chart located on the back of the amplifier.

**TWEETER LEVEL CONTROLS** – A Tweeter Level Control is provided for maximum tone flexibility. The “rockerswitch” control offers FULL tweeter output, - 6db level or a tweeter OFF position. Experiment with different settings to find the best position for your personal taste.

**SPEAKER CABINET CONFIGURATION** – This high powered professional product is constructed from Baltic birch plywood with an MDF baffle board. The result is an extremely light-weight enclosure with excellent projection and tone. A bottom-mounted handle is provided so that the speaker can be tilted up towards the performer. The loudspeaker is our custom designed GBE 12300 cast-frame 12” neodymium magnet structure, which is extremely efficient and light-weight, compared to conventional speaker motor structures. A compression tweeter is utilized for the high frequency reproduction and delivers articulate, pristine, clarity and texture.

**CAUTION!**

- Never set an amplifier on anything that will tip over or collapse under its weight.
- These amplifiers are capable of producing sound pressure levels that may cause hearing loss.
- There are no user serviceable parts inside these units. Always consult a qualified repair facility for service.

**WARNING!**

- The use and operation of this device constitutes an agreement of full release of any and all liability connected with its use. Only persons familiar with the operation of high powered audio equipment should attempt to operate this device.
- By use of this device, the user agrees to hold Genz Benz and its designers, sales agents and all other affiliates and related parties harmless in the event of any accident, injury, damage or loss resulting from such use.
- The manufacturer's sole responsibility is to provide a warranty on the specified performance of the product under normal operating conditions for a period of 3 years.

**WARRANTY:**

- Genz Benz warrants the model Shenandoah™ Acoustic Pro to be free from defects in materials and workmanship for a period of 3 years from the date of purchase, when purchased from an authorized Genz Benz dealer.
- This warranty does not cover normal wear and tear incurred from the normally designed use of the product.
- This warranty is effective only if a copy of the original sales receipt is presented at the time of warranty service.
- This limited warranty is completely transferable to any subsequent buyer as long as the original sales receipt is also transferred to such subsequent buyer.
- All warranty service must be performed by a Genz Benz authorized service center.
- Before returning any unit to the factory for service, a returned merchandise authorization number (RMA#) must be obtained by calling 480-941-0705.

# SHENANDOAH™ ACOUSTIC PRO

## ENGINEERING SPECIFICATIONS

### INPUTS

XLR Balanced channel input impedance:	2.2 k ohms
XLR Balanced channel input sensitivity:	-60 to -30 dBV
1/4" Unbalanced channel input impedance:	150 k ohms
1/4" Unbalanced channel input sensitivity:	-30 to +4 dBV
1/4" Unbalanced aux. input impedance:	10 k ohms
1/4" Unbalanced aux. input sensitivity:	-20 to +4 dBV
Phantom power (XLR Inputs)	+13.6V

### AMPLIFIER OUTPUT (each channel)

Power at 8 ohm load:	200 watts RMS
THD + N (preamp):	<0.02% typ.
THD + N (power amp):	<0.05% typ.
Frequency response:	20 Hz – 20 kHz +/- 1dB

### CHANNEL EQUALIZATION

Low frequency:	85 Hz shelving, +/-15dB
Mid frequency (sweep):	250 Hz – 5 kHz , peaking, +/-12dB
High frequency:	8 kHz shelving, +/-15dB

### DIRECT OUTPUTS

XLR balanced output level:	-30 dBV nominal
XLR balanced output impedance:	150 ohms
1/4" unbalanced output level:	+4 dBv nominal
1/4" unbalanced output impedance:	1 k ohm

### EFFECTS LOOP

1/4" unbalanced output level:	-10 dBV
1/4" unbalanced output impedance:	1 k ohm
1/4" unbalanced input level:	-10 dBV
1/4" unbalanced input impedance:	47 k ohm
1/4" TRS effects cancel jack:	short tip or ring to sleeve to cancel

### DIGITAL EFFECTS

Processor type:	Alesis™ DSP engine
Internal processing:	24 bit
A/D converter:	24 bit – 64X over-sampling
D/A converter:	24 bit – 128X over-sampling
Dynamic Range:	80 dB
THD + N (1 kHz):	<0.01%
Sampling rate:	48 kHz

### INTERNAL PRESET EFFECTS PROGRAMS:

3 – Plate Reverbs	1 – Chorus/Plate
3 – Room Reverbs	1 – Chorus
2 – Hall Reverbs	1 – Flange
1 – Rotary Effect	2 – Delays (long and short)
1 – Chorus/Room	1 – Bypass

Due to continuing product improvements and changes, all specifications are subject to change without notice

**DECLARATION OF CONFORMITY  
(89/336 EEC-EMC Directive)**

**Manufacturer's Name:** Genz Benz, a division of Kaman Music  
**Manufacturer's Address:** 7811 East Pierce Street  
Scottsdale, AZ 85257, U.S.A.

**Product Type:** Audio Amplifier  
**Model Number:** Shenandoah™ Acoustic Pro  
**Operating Power Condition:** 115/230V 50/60Hz  
**Effective Date:** 01-01-2006

**Conforms to the Following Standards:**

- EN 55013: 2001 + A1: 2003
- EN 55020: 2002 + A1: 2003
- EN 60065
- IEC 61000-3.3: 1994 + A1: 2001
- IEC 61000-4.2
- IEC 61000-4.3
- IEC 61000-4.4
- FCC 47CFR Part 15-B, Class B
- RoHS Directive 2002/95/EC
- WEEE Directive 2002/96/EC
- CE Mark LV Directive 73/23 EEC

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