SF-16B

16-Channel Digital Amplifier

Installation and Operation Guide

SonaFlex™
S E R I E S

AudioＡＡuthority®

Installation and Operation Guide
Model SF-16B

Table Of Contents

SF-16B Serial Number _____

Date of Purchase / Installation _____

Custom Installer _____

Telephone Number _____

This product has been tested by an accredited laboratory and meets the provisions of FCC 47 CFR Part 15.

(b) Operation of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

(c) The operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected.

ETL
c LISTED US
Intertek
4002715

FC

Audio Authority®

Lexington, Kentucky   www.audioauthority.com   800-322-8346

WARNING:

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

⚡	CAUTION	⚠
	RISK OF ELECTRIC SHOCK	

ATTENTION RISQUE DE CHOC ELECTRIQUE

The lightning flash 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.

! The exclamation point symbol within the eight-sided shape alerts users to important operating and maintenance instructions in this booklet.

• Read these instructions.

• Keep these instructions.

• Heed all warnings.

• Follow all instructions.

• This product must be installed by qualified personnel.

• Do not open the cover—there are no user-serviceable parts inside.

• Do not use this apparatus near water.

• Clean only with dry cloth.

• Make sure there is enough space around the unit for cooling. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

• Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

• Do not defeat the safety purpose of the grouding-type plug. If the provided plug does not fit into an outlet, consult an electrician for replacement of the obsolete outlet.

• Before plugging the unit into a power socket, please make sure you have selected the correct voltage.

• Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where it exits from the apparatus.

• Use only attachments/accessories specified by the manufacturer.

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

• 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.

AVERTISSEMENT:

Pour réduire les risques d'incendie ou de choc électrique, ne pas exposer cet appareil à la pluie ni à l'humidité.

⚡	CAUTION	⚠
	RISK OF ELECTRIC SHOCK	

ATTENTION RISQUE DE CHOC ELECTRIQUE

L'éclair terminé d'une flèche à l'intérieur d'un triangle indique à l'utilisateur la présence à l'intérieur de l'appareil d'une tension dangereuse non isolée ayant une amplitude suffisante pour provoquer une électrocution.

Le point d'exclamation à l'intérieur d'un triangle indique que des instructions de fonctionnement et d'entretien importantes sont detaillées dans les documents fournis avec l'appareil.

! Le point d'exclamation à l'intérieur de l'octagone indique à l'utilisateur que des importantes instructions d'opération et d'entretien sont incluses dans ce document.

• Lire toutes les directives avant de mettre l'appareil en opération.

• Conserver les directives de sécurité et d'utilisation pour future consultation.

• Tenir compte des avertissements.

• Suivre les directives.

• Ce produit doit être installé par un personnel qualifié.

• Afin d'éviter tout risque d'électrocution, ne pas retirer le capot ou la couvercle. Aucune des pieces intérieures n'est réparable par l'utilisateur. Pour toute réparation, s'adresser à un technician d'entretien qualifié.

• Ne pas utiliser cet appareil près de l'eau.

• Nettoyer seulement avec un chiffon sec.

• Assurez-vous que la circulation d'air autour de l'ampli est suffisante. Les ouvertures et fentes dans le chassis sont prévues pour la ventilations de l'appareil. Ces ouvertures ne doivent pas être bloquées. Installer conformément aux directives du manufacturier.

• L'appareil doit être situé loin de sources de chaleur telles que des radiateurs, des registres de chaleur, des fourneaux, ou d'autres appareils produisant de la chaleur.

• Ne pas modifier le dispositif de securité de la fiche ayant une broche de mise à la terre. S'il est impossible d'insérer la fiche dans la prise de courant, contacter un électricien pour remplacer la prise de courant.

• Avant de relier votre SF-16B à la tension secteur, assurez-vous qu'il est réglé sur la tension adéquate.

• Les cordons d'alimentation devraient être disposés de façon à ce qu'on ne puisse pas marcher dessus ou qu'ils soient susceptibles d'être coincés par des articles placés sur ou contre eux. Une attention particulière doit être portée aux fiches, prises de courant, et aux points où ils sortent de l'appareil.

• Utiliser seulement les attachements et accessoires recommandés par le manufacturier.

• Débrancher l'appareil de la prise d'alimentation pendant un orage électrique ou une absence d'utilisation prolongée.

• Confier tout entretien à un personnel de service qualifié.

• Un service d'entretien est necéssaire quand l'appareil ne fonctionne pas normalement en suivant les consignes d'utilisation, quand le cordon d'alimentation ou sa fiche sont endommagés, quand des objets sont tombés dans l'appareil, quand du liquide y a étè renversé, ou quand l'appareil a été exposé à la pluie ou à l'eau.

INTRODUCTION

The SonaFlex SF-16B combines an innovative digital amplifier design with a rock solid linear power supply to yield musicality and power like no other amp in its class. It is the basic version of the SF-16M, a matrix amplifier with many other advanced features, but the basic version has all the musicality and headroom that makes the SonaFlex series popular with audiophiles. Built and designed in the U.S. with sound and video integrators in mind, the SF-16B offers simple path to high fidelity amplification for commercial and residential distributed audio applications with or without a matrix preamplifier.

Key Features

- 16 analog RCA inputs that can operate 1:1 (usually with a matrix preamp) or in bus mode (all outputs on inputs 1,2).
- Class-D amplification provides a conservatively rated 45 watts per channel (all channels driven) or 60 watts (8 channels driven) at 8 Ohms - stable to 4 Ohms.
- Linear power supply delivers the warmth and musicality of an analog amplifier, combined with the responsiveness and headroom required for dynamic music content.
- Power saving features include automute and a system trigger input so that power management devices can put the SF-16B in standby when not in use.

Carton Contents

- SF-16B 16-Channel Amplifier
- Power Cord
- DB-25 cable (see page 8)
- Rack ears (see page 22)
- User manual

Other Materials You May Need

- Speakers and cabling
- Audio sources
- RCA patch cables

BEFORE YOU BEGIN

- Confirm that nothing is missing from your shipping carton. Refer to Carton Contents above.
- Record the serial number (see rear panel) in the space provided inside the cover of this manual for easy reference.
- Activate your warranty and receive firmware update notifications by registering at www.audioauthority.com/register.
- Read this instruction manual to become familiar with the configurations and functions of this product.

BASIC SETUP TASKS

1. Thoroughly plan your system layout including wire runs, audio inputs and speaker locations.
2. Mount the SF-16B in an equipment rack; pull and label all audio and control cabling.
3. Connect audio sources to SF-16B input(s) and speakers to amplified outputs of the SF-16B.
4. Set Turn On Mode and Bus Mode and connect Trigger if desired.
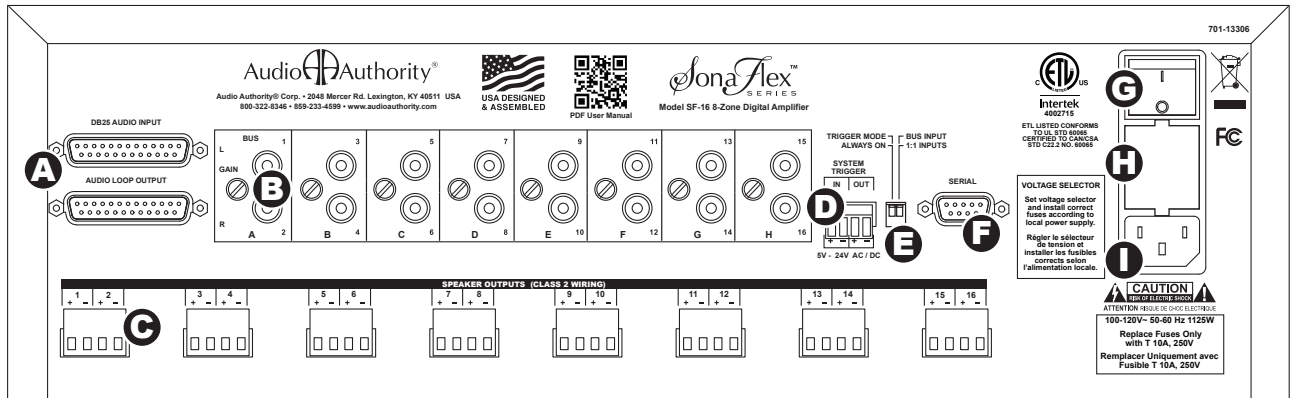4. Test all audio inputs at all speaker locations.

BACK PANEL DESCRIPTIONS

Figure 1

A Quick connect audio inputs and loop outputs via DB-25 connector. This connection is ideal for connecting multiple SF-16B units to share the same input(s) or for use with ADX and HLX matrix preamps.

B RCA audio inputs with gain adjustment per stereo pair. Input A is the Bus Input when Bus Input is on (E).

C Stereo speaker-level Outputs.

D System Trigger In & Out (5V - 24V AC / DC). Trigger output may be connected to additional SF-16B or other equipment.

E Feature switches 1 and 2. Switch 1 sets Trigger Mode or Always On mode. Switch 2 sets Bus Input for use with one source, or 1:1 Inputs, individual inputs for each output, for use with matrix preamp.

F DB-9 RS-232 (p.8).

G Power switch.

H Fuse compartment (p.10).

I Power cord input.

SF-16B CONNECTIONS - Speaker Outputs

Speaker Outputs

Connect speakers to removable speaker terminals using appropriate gauge speaker wire. Speakers may be installed while the amplifier is playing. The SF-16B shuts down any output that has a dead short until the short is cleared. The output comes back on with no reset necessary.

Speakers and Impedance

Each amplfier output of the SF-16B can support a 4 Ohm speaker load. In many cases only one speaker is connected per amplifier output, so any single speaker with a 4 - 8 Ohm impedance rating is acceptable for use with the SF-16B. Two 8 ohm speakers can be connected in parallel onto a single SF-16B amplifier output without sacrificing performance (Figure 7). Do not connect multiple 6 ohm or 4 ohm speakers to one SF-16B output, and do not connect multiple speakers wired in series.

Figure 2 - Parallel speaker wiring

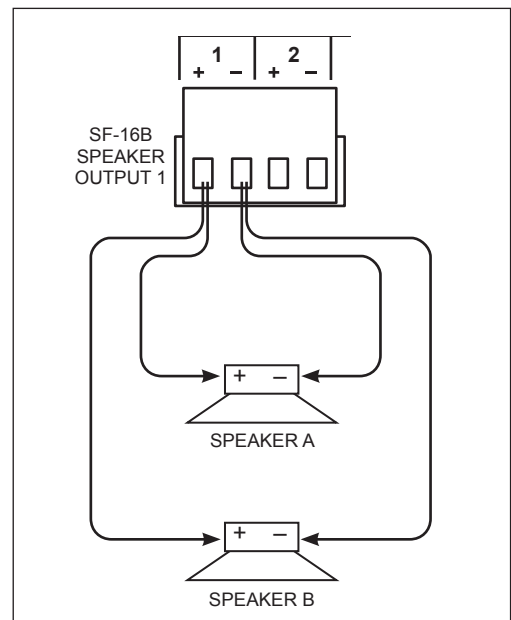| Speaker Impedance	8Ω	6Ω	4Ω
Max # of speakers per SF-16 amp output	2	1	1

SF-16B CONNECTIONS - Audio Inputs

RCA Line Inputs

The SF-16B includes 16 RCA audio inputs in stereo pairs, and as an alternative, a quick connect input using a DB-25 cable. If used with a matrix preamp, all inputs correspond to like numbered outputs, and 1:1 Input setting should be used. If used with a single source or with a switch, use Bus Input setting, and connect Input A (1 and 2) only.
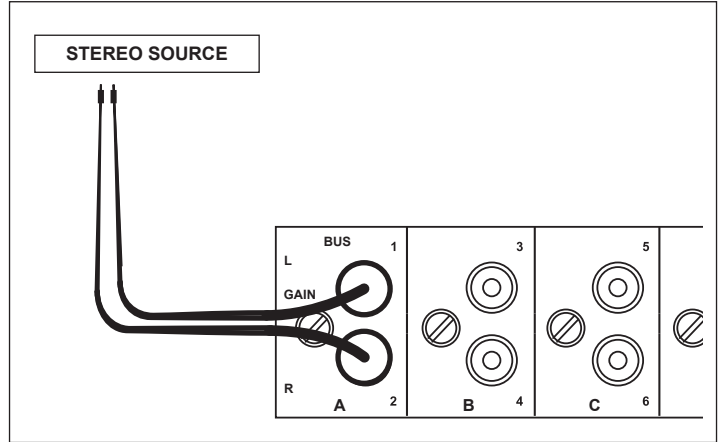

Figure 3

Audio Connections

1. **Input from a single source or switcher:** For installations where there is only one source at a time for all SF-16B outputs, set Switch 2 to Bus Input and connect the source to Inputs 1 and 2.

2. **Input from an Audio Authority audio matrix:**
   For installations where the SF-16B is serving as an amplifier for Audio Authority audio matrix preamplifiers such as the ADX-0808, ADX-1616 (Figure 4) or the HLX with 2278 audio output card (Figure 5).

   In these configurations, the SF-16B receives all audio content from the ADX or HLX and passes the audio through to the corresponding amplified outputs. The HLX or ADX provides matrix switching, volume control, equalization, tone and balance.

   One ADX-1616 supports two SF-16B amplifiers, and the HLX platform can be configured to support up to twelve SF-16B amps, one for each audio output card.
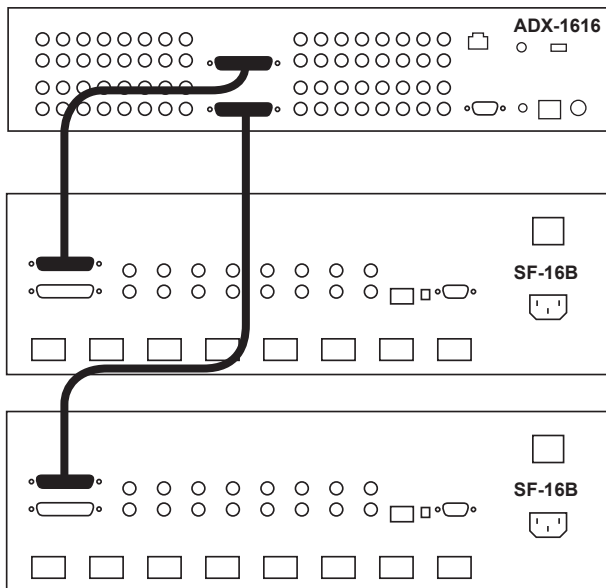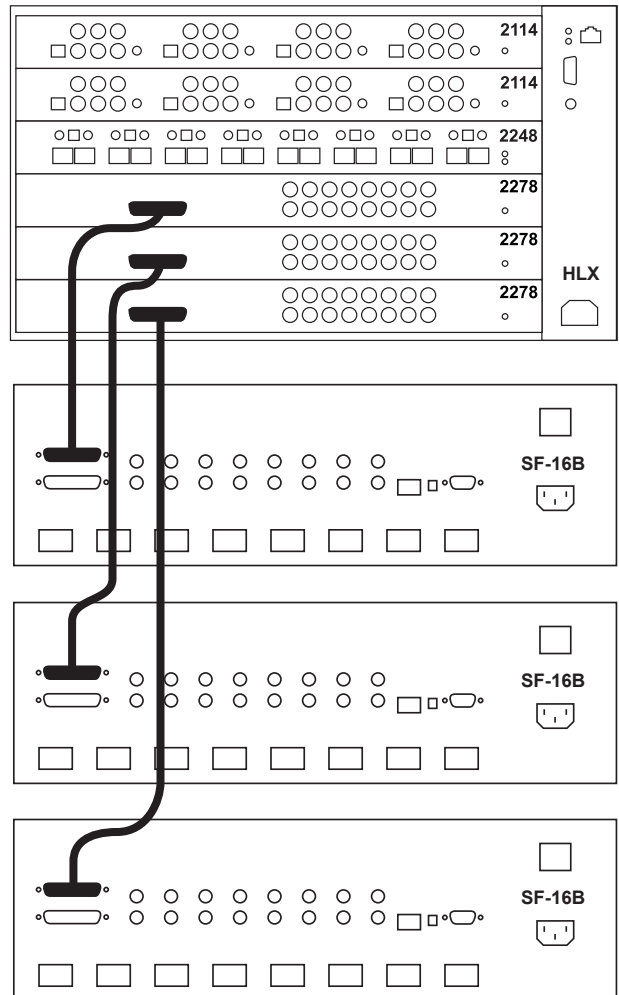

Figure 4

Figure 5

SF-16B CONNECTIONS - System Trigger (5V-24V AC/DC)

The System Trigger input on the SF-16B allows equipment such as AV receivers or power managment devices to put the SF-16B in standby when not in use, thereby greatly conserving energy usage.

To enable the System Trigger:

1. Make system trigger connections as illustrated in Figure 13.
2. Power the SF-16B, then apply power to the triggering device.
3. Set System Trigger DIP switch in the up (TRIGGER MODE) position.
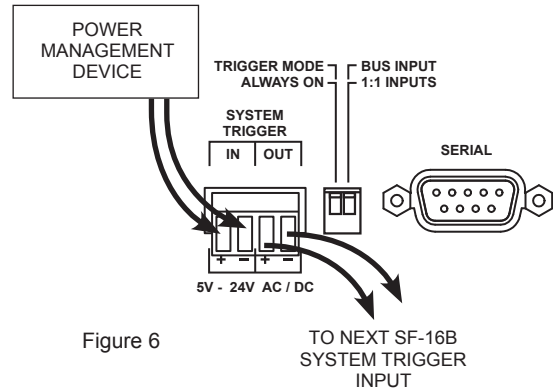
Figure 6

Serial Connection

Firmware updates are accomplished via the serial port and a Windows PC firmware update utility. Serial connection pins are shown in Figure 7.
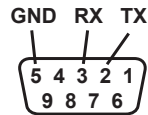
Figure 7

SF-16B Rack Mounting

The SF-16B is designed so that it may be installed either on a shelf or in a standard 19-inch equipment rack. If rack mounting, remove the feet and the cover screws adjacent to the front panel of the unit. Reuse the cover screws to mount the rack adapters supplied with the SF-16B. Be sure to place a spacer under the adapters at every screw location. Secure the SF-16B to the rails of the equipment rack with the screws supplied, and use appropriate chassis supports, such as Middle Atlantic CSA Series.
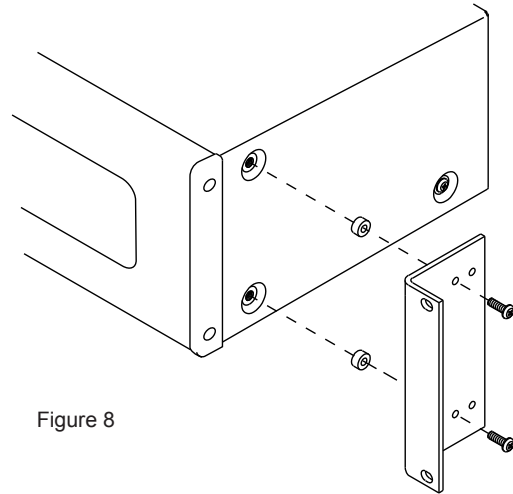
Figure 8

Changing the Power Fuse

Before changing the fuse, find and correct the excessive impedance load or wiring short that caused the fuse failure.

The fuse compartment contains two extra fuses that can be used to replace blown fuses in the field. Access the replacement fuses by sliding out a compartment behind each fuse, as shown in Figure 9.

- Remove the power cord.
- Carefully remove the fuse cover using a flat blade screwdriver.
- Inspect both fuses to determine which one is blown.
- Replace the blown fuse with a spare fuse, or a fuse of the same value.
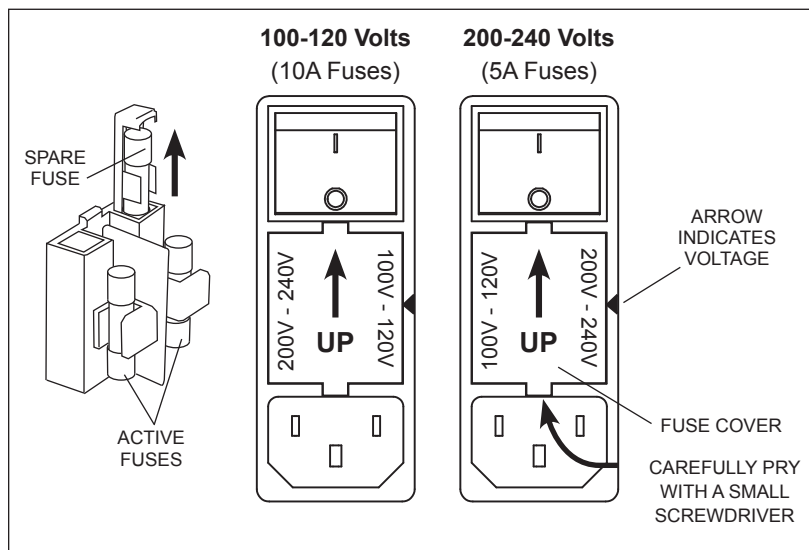- Orient the fuse cover so that the arrow points toward the correct voltage for your region as shown in Figure 9.

Figure 9

SF-16B Specifications

Power Per Channel (All Channels Driven):	45W @ 8 Ohms, 60W @ 4 Ohms
Power Per Channel (8 Channels Driven):	60W @ 8 Ohms, 80W @ 4 Ohms
Frequency Response:	20Hz to 20kHz, +/-1db into 8 Ohms
Full Power Bandwidth:	20Hz to 20kHz
S/N Ratio:	96dB
Channel Separation:	80dB(channel to channel @1kHz)
THD+N:	<0.7% @ full power output
IMD:	<0.5% @ full power output
Input Sensitivity:	0.5Vrms
Input Impedance:	10k Ohms
Audio Clock Frequency:	96KHz
Output Clock Frequency:	385KHz
Output Protection:	Short Circuit, Over-Temperature, Overload
Line Voltage & Frequency:	100-120VAC 50-60Hz 200-240VAC 50Hz
Power Consumption:	1125W continuous, 1280W for 2 minutes
Maximum Current Draw:	5A RMS @ 240VAC 10A RMS @ 120VAC
Heat Output:	630 BTU/hr maximum
Dimensions (H x W x D):	5.22" x 16.60" x 14"
Net Weight:	41 lb.
Shipping Weight:	49 lb.
Approvals	FCC, ETL
Warranty:	Two years, parts and labor

Limited Warranty

If this product fails due to defects in materials or workmanship within two years from the date of the original sale to the end-user, Audio Authority guarantees that we will repair or replace the defective product at no cost. Freight charges for the replacement unit will be paid by Audio Authority (Ground service only). A copy of the invoice from an Authorized Re-seller showing the item number, serial number, and date of purchase (proof-of-purchase) must be submitted with the defective unit to constitute a valid in-warranty claim.

Units that fail after the warranty period has expired may be returned to the factory for repair at a nominal charge, if not damaged beyond the point of repair. All freight charges for out-of-warranty returns for repair are the responsibility of the customer. Units returned for repair must have a Customer Return Authorization Number assigned by the factory.

This is a limited warranty and is not applicable for products which, in our opinion, have been damaged, altered, abused, misused, or improperly installed. Audio Authority makes no other warranties either expressed or implied, including limitation warranties as to merchantability or fitness for a particular purpose. Additionally, there are no allowances or credits available for service work or installation performed in the field by the end user.