



**SSA 1.1 STEREO SOURCE
AMPLIFIER.**

USERS MANUAL.

Welcome...

Thank you for choosing the Buzz Audio SSA 1.1 Stereo Source Amplifier.

In this manual you will find important information regarding the use of your SSA and we suggest that you do read it before using the unit.

If after unpacking the SSA you find any damage you should contact your dealer or supplier immediately for advice on what to do.

We also suggest you retain the original packaging at least during the warranty period in case you need to return the unit for service, however we are confident this will not be necessary!!

- **Warm Up.**

The Buzz Audio SSA utilises discrete Class A amplifiers which take about 15-30 mins to warm up. We suggest you keep the SSA switched on whilst in regular use to ensure continuous sonic performance.

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1] The Mains Input.

As a safety precaution your SSA is shipped without a mains fuse fitted. Before use, you must select the correct mains voltage for your local supply on the rear panel and fit the correct mains fuse type into the fuse draw for that voltage.

- **Setting the Voltage Selector...**

You will need a flat blade screwdriver.

If your mains voltage is 110V to 120V set the rear panel voltage selector to 110V.

If your mains voltage is 220V to 240V set the rear panel voltage selector to 220V.

POWERING UP THE SSA WITH THE WRONG VOLTAGE SETTING MAY CAUSE SEVERE INTERNAL DAMAGE !!

- **Selecting the Correct Fuse...**

In the supplied accessories bag you will find;

2x 1 Amp slow blow fuses, FIT for 220V to 240V.

2x 2 Amp slow blow fuses, FIT for 110V to 120V.

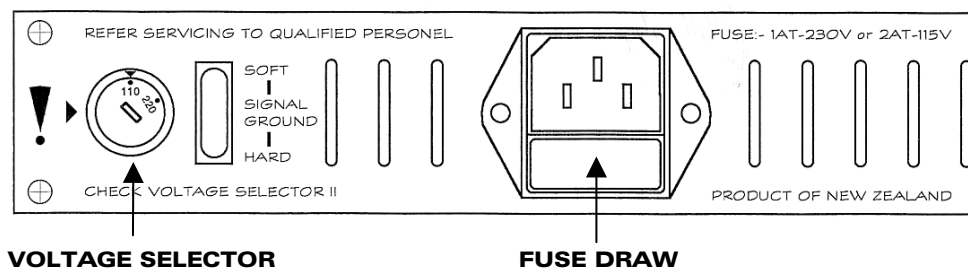
Slide out the fuse draw below the IEC power inlet (rear panel) and insert the appropriate fuse into the carrier clip. Note there is also a position in the carrier for a spare fuse (the square tube bit) and we suggest you store the second supplied appropriate fuse here.

- **Please Note...**

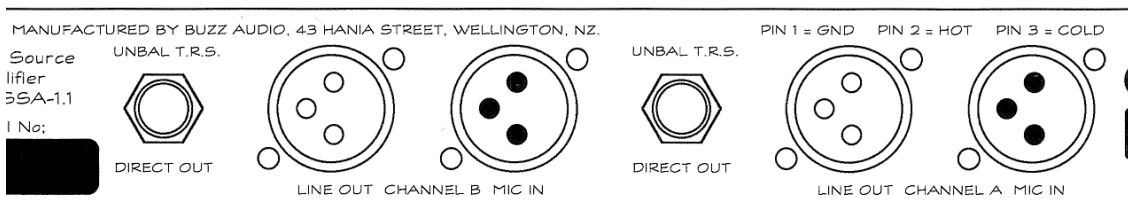
Fitting the wrong fuse may result in the fuse blowing on power up or inadequate protection.

Fitting fast blow type fuses may also result in the fuse blowing on power up.

Your dealer may have already set all this up for you but it pays to check it before powering up the SSA.



2] Connections.



- **Mic In.**

The SSA is designed as a balanced input microphone amplifier. The connection of unbalanced sources to the Mic input is not recommended. Use the front panel Pickup input for this purpose. The XLR female style Mic input connector is wired as follows;

- Pin 1 = Signal Ground (common)
- Pin 2 = Signal Hot (+)
- Pin 3 = Signal Cold (-)

- **Line Out and Direct Out.**

The SSA has two output connections which can be used simultaneously. In standard configuration the XLR Line Out is balanced with a nifty "transformer acting" balanced line driver stage. If the optional output transformers are fitted (see the section on Options) the XLR is still wired the same, as follows;

- Pin 1 = Chassis Ground
- Pin 2 = Signal Hot (+)
- Pin 3 = Signal Cold (-)

The 1/4" jack Direct Out is an unbalanced output which bypasses the balanced line driver stage. It may be used to obtain a more direct path from the mic or pickup inputs, however the \emptyset (Phase) and Mute functions are not available. Also, the power up - down auto mute does not affect this output so watch out for "splats" when switching the SSA on or off! The Direct Out uses a T.R.S. type socket (which should be treated as balanced to avoid earth loops) and is wired as follows;

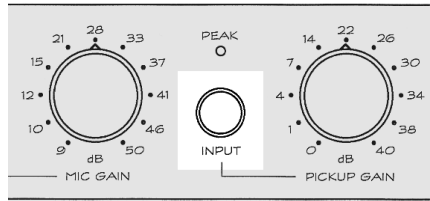
- Tip = Signal Hot (+)
- Ring = Signal Ground (common)
- Sleeve = Chassis Ground

- **Please Note...**

The Chassis Ground connection is intended for connecting cable SHIELDS. When connecting the SSA outputs to other devices, it is not always necessary to connect the shield at both ends of the cable. This may help prevent earth loops occurring. The Mic input Signal Ground however is always connected at both ends to ensure correct shielding of the cable and mic body. The Pickup input will also require connection of the shield (sleeve) at both ends.

The Signal Ground source can be selected HARD or SOFT, see the Controls and Indicators section.

Connections continued...



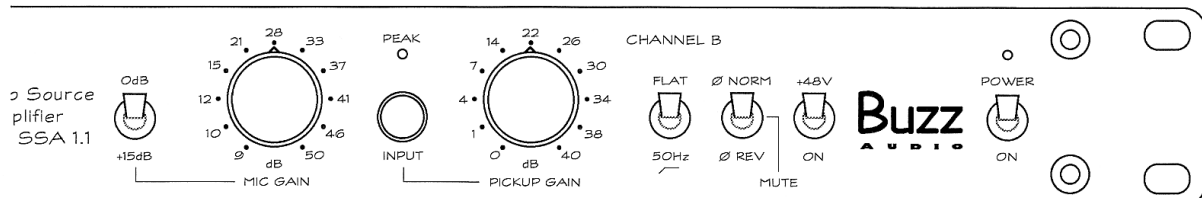
- **Pickup Input.**

The front panel Pickup input is designed to accept a wide range of unbalanced sources such as guitar pickups, keyboards, samplers etc. The 1/4" T.R.S. jack socket is wired unbalanced as follows;

- Tip = Signal Hot (+)
- Ring = Signal Ground (common)
- Sleeve = Signal Ground (common)

Note you can use both balanced and unbalanced wired jack plugs on this input. Inserting a jack into this input automatically selects the Pickup input into the signal chain and the Mic input is muted.

3] Controls and Indicators.



- **0dB ... +15dB**

Mic input gain boost. In the up position the gain of the SSA mic input is as marked around the MIC GAIN knob. In the down position, 15dB of boost is added. Use for low level sources or low sensitivity microphones, such as ribbon mics, or when you can't get enough output level from the SSA into your recording device. Note this switch does not affect the Pickup input gain.

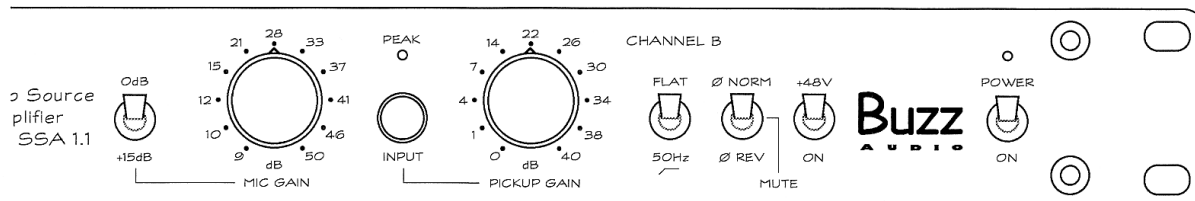
- **MIC GAIN**

This control adjusts the gain/volume of the SSA Mic Input only.

- **PICKUP GAIN**

This control adjusts the gain/volume of the Pickup Input only. What more can we say?

Controls and Indicators continued...



- **PEAK**

This led will light when the output of the SSA reaches +18dBu indicating a possible overload condition. It is active for both Pickup and Mic inputs. The SSA is capable of +24dBu output level therefore there is 6dB headroom remaining once this led has lit. The threshold of this indicator can be internally adjusted if you desire, see the section on Internal Adjustments.

- **FLAT ... 50Hz**

High Pass Filter (HPF). In the up position, the SSA bass response is ruler flat down to 4.0 hertz. In the down position, a filter centred around 50 hertz is inserted in the signal path. The filter is a Bessel alignment (which sounds very nice by the way) with an ultimate slope of 18dB per octave. This feature is useful in eliminating very low frequency content without disturbing in band audio signals (except maybe bass instruments). Think of it as a "rumble filter" you used to find on older hifi amplifiers, but with a bit more finesse. The HPF is active in both Pickup and Mic modes.

- **Ø NORM ... MUTE ... Ø REV**

Output Phase reverse and Mute switch. In the up position the output is in phase with the input. In the down position the output phase is reversed compared to the input. In the middle position, the SSA Line output is muted. Note this switch has no affect on the Direct output because the Direct output is derived prior to the balanced output driver stage.

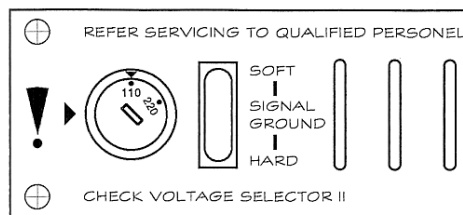
- **+48V ... ON**

Phantom power required for condenser microphones and active DI boxes connected to the Mic input. In the down position, 48V is applied to pin 2 and 3 of the Mic input XLR connector via 6k8 ohm resistors. The SSA features a "soft start/stop" type 48V regulator circuit and in some cases it may not be necessary to MUTE the SSA whilst operating this switch. That said, some condenser microphones may generate their own power up "splats". If in doubt, MUTE the SSA before operating this switch.

- **POWER ... ON**

We recommend that your SSA remains powered whilst in regular use to maintain it's excellent sonic performance. If you need to turn it off, this switch will do it. Down is ON by the way and the little yellow led will show when you've performed this function correctly. The balanced Line Out is automatically MUTED during power up and power down - but beware - the Direct Out is not and there maybe a loud BANG unless you turn down you monitors.

Controls and Indicators continued...



- **SIGNAL GROUND.**

This rocker switch on the rear panel selects **HARD** or **SOFT** internal signal grounding. In the **HARD** position, the **SSA Signal Ground (common)** is connected directly to the mains earth and **SSA chassis**. In the **SOFT** position, the **Signal Ground** is lifted from the mains earth via a **10 ohm resistor**.

Normally the **Signal Ground** switch should be set to **HARD**. If you experience problems with "hum" when connecting the **SSA** to other devices, try the **SOFT** position.

- **Please Note...**

The mains earth to **SSA chassis** connection is unaffected by this switch. Also, the **Chassis Ground** connection on the output connectors is unaffected by this switch. Also see the **Connections** section of this manual.

FOR SAFETY REASONS THE SSA 1.1 SHOULD ALWAYS BE EARTHED. RESIST THE TEMPTATION TO REMOVE THE EARTH TO GET RID OF HUM. FIX IT ELSEWHERE IN THE SYSTEM.

4] Options.

- **Output Transformers.**

Mounting holes on SSA bottom panel directly in front of the input and the output connectors are provided for fitting Sowter type 8403-X line output transformers. Sowter transformers are made in England and can be purchased on line at <http://homepages.tcp.co.uk/~sowter/>

Buzz Audio can also supply the transformers pre-fitted to the SSA or as a kit for retro fitting. Soldering is required to fit the output transformers. For further information contact your dealer or Buzz Audio.

- **Special Input Versions of the SSA 1.1.**

Buzz Audio can supply special versions with a different Mic input impedance, eg 600 Ohms. Contact your dealer or Buzz Audio for more information.

5] Tips.

- **Ensure the SSA has adequate ventilation. The Class A circuitry does generate a fair amount of heat and the box will get warm. Avoid racking next to high heat generating devices.**
- **Avoid racking the SSA next to possible induced noise sources such as power amplifiers or anything with a big power transformer and equipment that uses large switching power supplies like computers or VDU's.**
- **Even though protection is provided in the circuitry, avoid connecting/disconnecting microphones with the MIC GAIN on a high setting and/or with the 48V phantom switched on. Turn down the MIC GAIN and switch off the 48V. This will avoid huge transients entering the amplifier front end causing possible damage to the electronics.**
- **If using ribbon microphones with the SSA, ensure you switch off the +48V phantom power and wait 5-10 seconds for the power to discharge before connecting the mic. Some ribbon microphones can be damaged by phantom power.**
- **Clean the SSA with a damp cloth and a little detergent. Do not use solvents or isopropyl alcohol, it may damage the finish.**
- **If you do need to remove and replace the lid of the SSA, be careful not to over tighten the screws into the aluminium extrusions, as they can strip out easily. Replacement rails can be obtained from Buzz Audio if required.**

6] Service.

We are confident that you will receive many years of trouble free operation from your unit. If however you experience any technical problem with your SSA 1.1, contact your dealer or Buzz Audio for recommendations on what to do. The modular nature of the SSA construction means most electronic faults can be easily repaired by swapping circuit boards.

For on line support visit our web site; <http://www.buzzaudio.com>

Buzz Audio, 43 Hania Street, PO Box 6677, Te Aro, Wellington, New Zealand. Voice/Fax 64+4+385-2478.

Email; support@buzzaudio.co.nz

7] Specifications.

• MIC INPUT

Gain Range;	+9dB to +65dB.
Max Input Level;	+14dBu.
Input Impedance;	1k2 ohms resistive.
Frequency Response;	4Hz to 200kHz (-3dB) @ 30dB gain.
Harmonic Distortion;	less than 0.01% 100Hz to 10Khz.
Equivalent Input Noise;	-132.5dB (A wtg, 150 ohm source Z).
CMNR;	less than 70dB 100Hz to 10Khz.

• PICKUP INPUT

Gain Range;	0dB to +40dB.
Max Input Level;	+10dBu (0.1% THD).
Input Impedance;	1 million ohms.
Frequency Response;	4Hz to 200kHz (-3dB) @ 30dB gain.
Harmonic Distortion;	typically less than 0.015% 100Hz to 10Khz.
Signal to Noise Ratio;	-76dB (A wtg, input shorted).

• COMMON SPECS

Max Line Output Level;	+24dBu into 3k ohm load.
Max Direct Output Level;	+24dBu into 10k ohm load.
Channel Crosstalk;	below noise.
Mains requirements;	115/230 Vac selectable.
Package;	1U rack mount (482Wx44Hx250D), 4.5kg.

0dBu = 0.775mV RMS in these specifications.

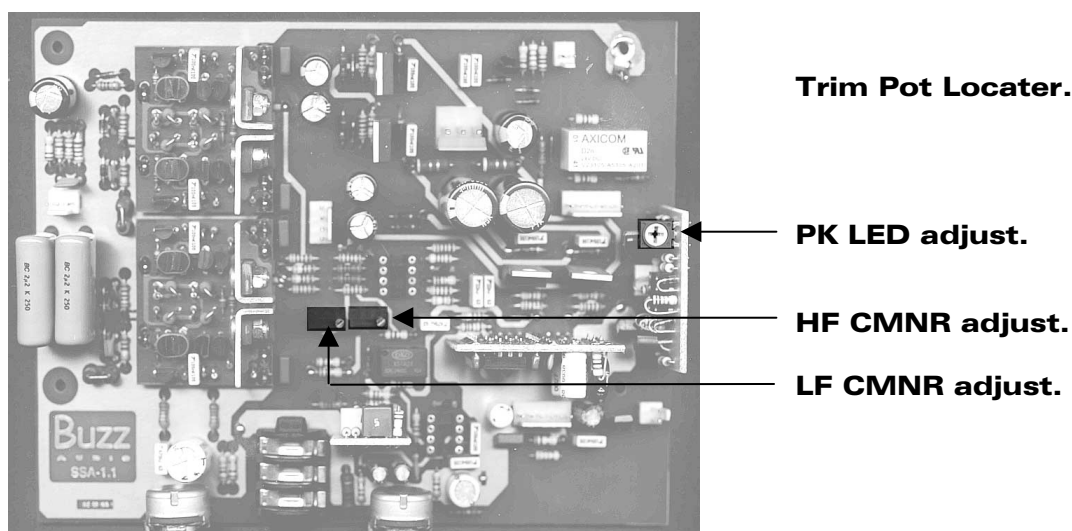
SPECIFICATIONS ARE TYPICAL OF A PRODUCTION UNIT AND SUBJECT TO CHANGE WITHOUT NOTICE.

8] Internal Adjustments.

- The following information is provided should your SSA 1.1 require re-calibration. All adjustments are performed in the factory and should not need re-adjustment unless the amplifier modules and/or other components have been replaced. You may wish to alter the PK LED threshold to a lower or higher setting.

PLEASE NOTE - If in doubt, do not attempt any internal adjustments, seek technical help.

- **SSA 1.1 Channel Card Top View**



- **Initial Setup.**

See above for the location of the trimmer pots. Set all front panel switches (except for the PWR obviously) to the UP position. Set the GAIN knobs fully anticlockwise. Remove any jacks plugged into the Pickup input. The SSA should be powered up for 1/2 hour before making adjustments. All measurements are referenced to 0dBu = 0.775V RMS, (sometimes called 0dBm).

- **PK LED Threshold Adjustment.**

Connect an audio voltmeter to the channel Line out that is to be adjusted. Apply a -20dBu 1kHz balanced sine wave signal to the channel input. Adjust the MIC GAIN knob to obtain +18dBu (or your desired threshold level) on the audio voltmeter. Adjust the PK LED trimmer so that the front panel PK LED just lights.

Internal Adjustments continued...

- **Low Frequency and High Frequency CMNR.**

CMNR is the Common Mode Noise Rejection, the ability of the amplifier to reject noise common to both “legs” of the balanced input. See the previous page for the location of the LF (low frequency) and HF (high frequency) trimpots.

Connect an audio voltmeter to the channel Line out that is to be adjusted. Apply a +10dBu approx 1kHz square wave signal to both PIN 2 and PIN 3 of the channel input connector. Switch ON the +15dB mic gain boost. Set the MIC GAIN knob to the 34dB marked position. Adjust the LF CMNR trimmer for a minimum reading (dip) on the audio voltmeter.

Change the input square wave frequency to 10kHz adjust the HF CMNR trimmer for minimum reading on the voltmeter. Return to the 1kHz input frequency and check the LF adjustment again, re adjust as necessary. Finally, check the HF adjustment null whilst still applying a 1kHz square wave input.

- **Problems ?**

Contact your dealer or Buzz Audio.

9] Warranty Information.

- **Disclaimer**

Buzz Audio is not liable for any damage to microphones, amplifiers, consoles, speakers or any other equipment and/or electric shock to humans that is caused by negligence or improper installation and/or use of the SSA 1.1 Stereo Source Amplifier.

- **Product Warranty**

Buzz Audio guarantees the SSA 1.1 Stereo Source Amplifier to be free of defective materials and/or workmanship for a period of 2 years from the date of sale, and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use – provided the unit is returned to our factory (or duly authorised service centre) via prepaid transportation with a copy of the proof of purchase, ie, sales receipt. This warranty provides that examination of the returned product must indicate, in our judgement, a manufacturing defect. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced.