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Aurora Audio *Stinger* Microphone and Instrument Amplifier

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Introduction:-

“Congratulations on your purchase of our Stinger! I am confident that you will find that its many features and great Class A discrete vintage sound will help you to make great recordings.

The Aurora Stinger is a portable and professional piece of equipment.

Read through this manual to familiarize yourself with the controls and optimal operating procedures.

Please familiarize yourself with the sections dealing with metering and gain structure when recording to digital equipment.”

-Geoff Tanner

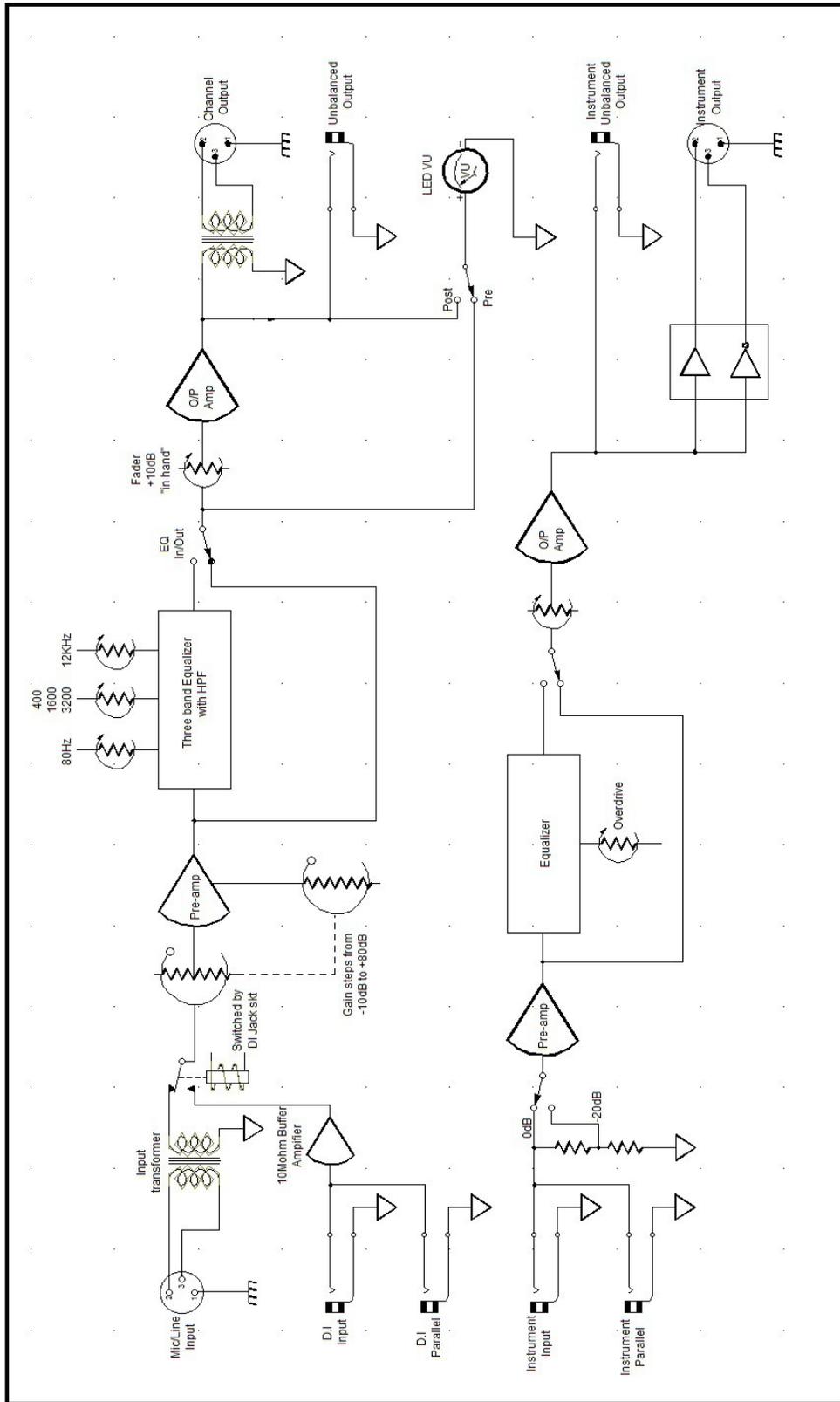
Power Supply information :-

The Aurora Stinger has internal regulated power supplies that automatically adjust to whatever a.c. power source you connect it to. There is no voltage selection switch as the power supplies will automatically work between 80 and 265 volts a.c 50 or 60Hz.

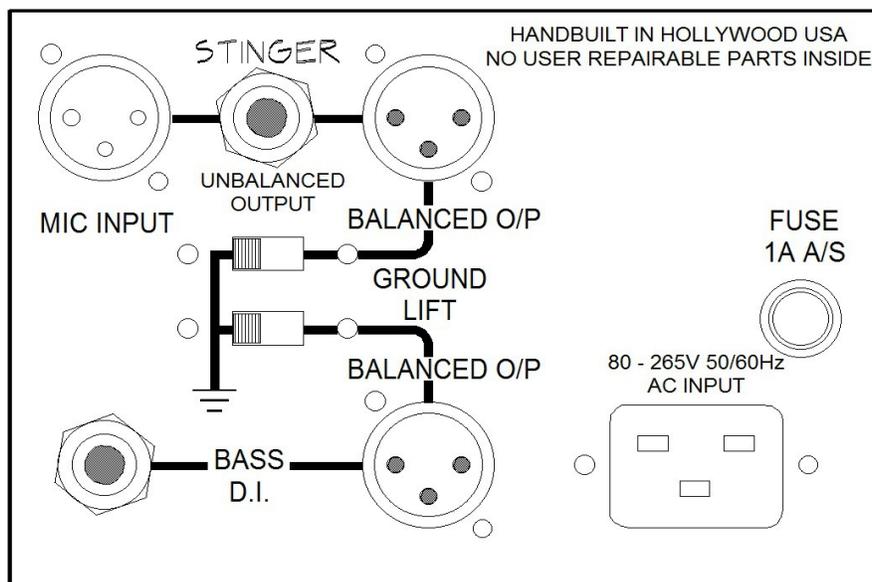
The unit must be grounded using the supplied 3 core, 3 pin connector cable. Do not use with any ground lifting adapter or two pin extension cable.

For the best noise performance and maximum safety, always ensure that the Stinger is plugged into a 3 pin grounded power outlet.

Block Diagram :-

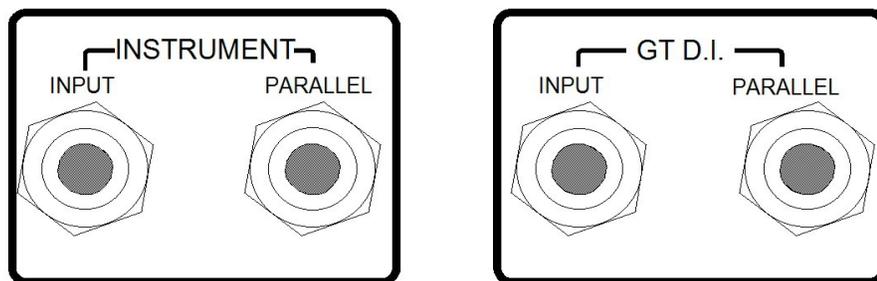


Connecting to the Aurora Stinger :-



The Aurora Stinger has two independent audio paths, both have level controls and XLR balanced and TRS unbalanced outputs. Both balanced outputs have ground lift switches to eliminate ground loops when connecting to external equipment.

At the top, the XLR female connector marked “Mic Input” can also accommodate line inputs and has a gain range of -10dB to +80dB on the red bar knob with additional control of +10dB to infinity via the 100mm travel fader.

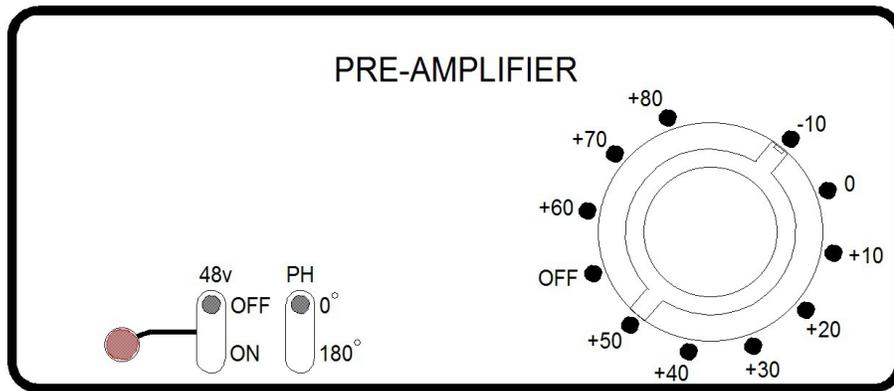


At the front are four mono jack sockets. In each pair the left sockets are always inputs and the right is always a parallel output. Do not plug inputs into the right hand jacks!

When a cable is plugged into the GT DI left input jack socket it will disable the rear XLR input automatically.

The Instrument DI input is an independent circuit path

The Regular DI/Mic input and Correct Gain Structure :-

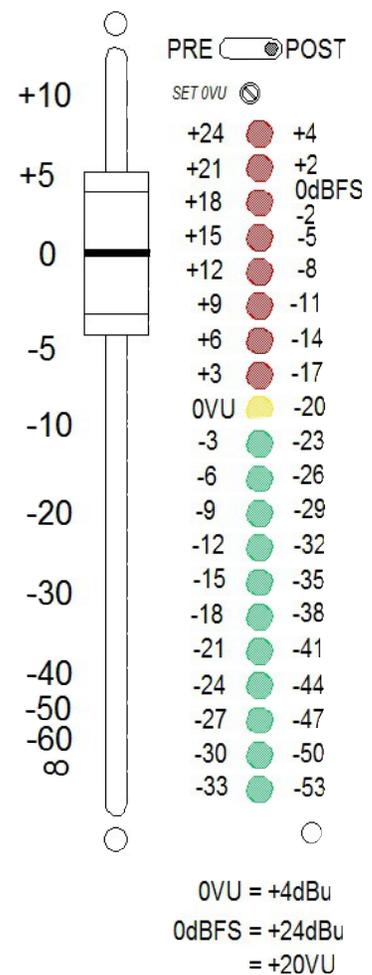


Both the Mic and GT DI paths share the gain and metering shown here. The meter has almost 60dB range in 3dB steps and is calibrated on the left in analogue VU range (the yellow LED is 0VU = +4dBu) and digital dBFS range on the right. The 0dBFS value varies from user to user, converter to converter, and country to country. The most common is -18dBFS = 0VU and that is the scaling on this meter.

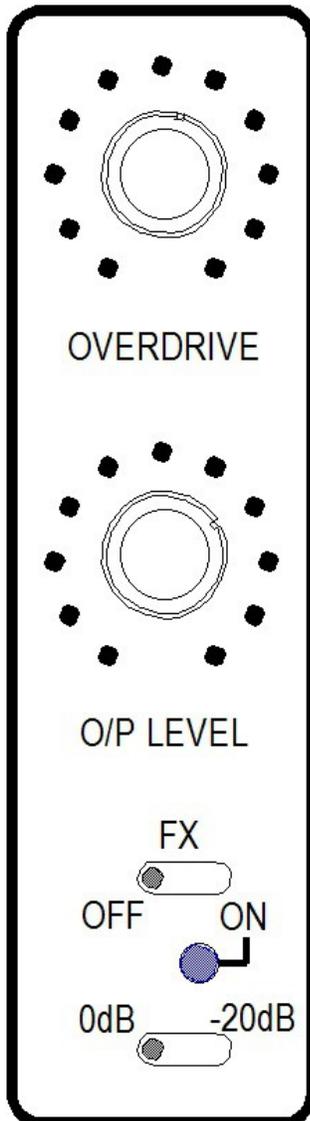
To set up the correct gain for your input, set the meter to “Post” input, the fader to 0dB, and the gain knob to -10dB. Using whatever source you have, rotate the gain knob clockwise until the VU is just hitting the yellow LED. If you are using a higher dBFS setting, ignore the color of the LEDs and adjust the gain for whatever reference your converter needs.

Please be aware that the higher the level you record at, the less headroom you have and the red LEDs are warning you of this issue.

Your converter will generally clip around 0dBFS and the Stinger will clip just before the +4dBFS point. When recording it is essential to allow sufficient headroom before the clipping points!



The Instrument input DI and EQ controls :-



The left hand front Instrument DI sockets work in conjunction with these controls. If the FX is deselected the path is one megohm input impedance and has +30dB gain to the balanced output XLR.

While it is intended for use for bass guitars, with the FX switched off the sound is clean, low distortion, and can also work equally well with regular guitars and most other types of sources.

The maximum input before clipping (1% THD) is -5dBu (25dB headroom) and can accept input levels up to +15dBu if the -20dB attenuator is switched in.

The red O/P level knob controls the output level of this circuit path.

If the FX overdrive path is selected the gain will increase +15dB and the blue overdrive control can be adjusted to get whatever degree of guitar grunchiness is required. The red output level knob can be turned back to avoid overdriving the output while still maintaining the overdriven sound.

Three separate outputs are available from this instrument input path :-

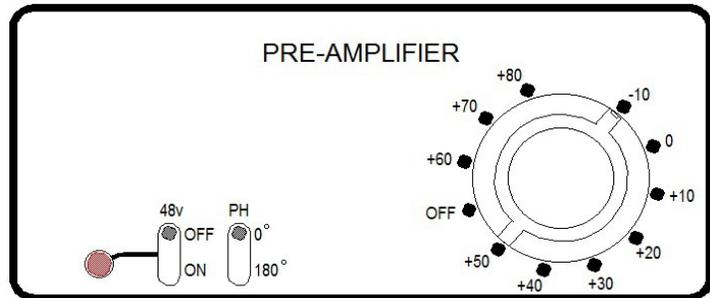
1. The parallel input on the front panel that could be sent to another (guitar) amplifier.
2. The balanced XLR output on the rear panel
3. The unbalanced jack socket on the rear panel.

Either of the rear panel signals can be routed back through the mic path to add EQ and Class A sound.

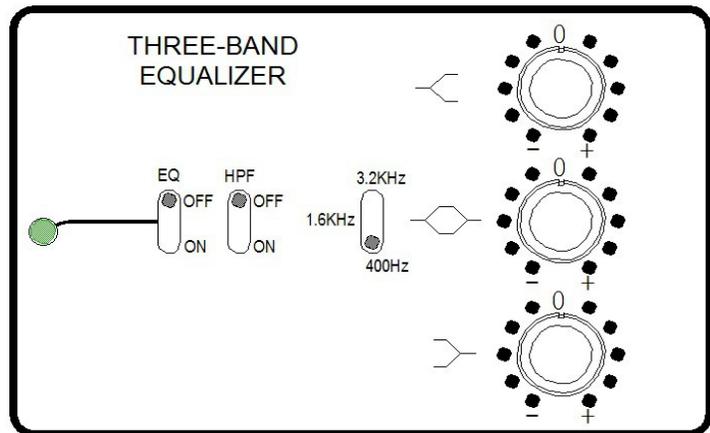
Equalizer, Phase, and Phantom Power Controls :-

The GT Mic and DI paths both pass through the controls illustrated here.

The red bar knob, as discussed on Page 6, controls the gain and the two toggle switches to the left switch on the 48v phantom power for condenser microphones and flip the phase on the balanced XLR output path.



The three band equalizer provides +/-16dB boost and cut for the three controls. The high frequency control is 12KHz, the low frequency control is 80Hz, and the three mid frequency choices are 400Hz, 1600Hz and 3,200Hz.



A high pass filter provides 18dB/octave roll-off at 80Hz.

Using the Aurora Stinger :-

The Aurora Stinger has been designed to provide the user with an amazing number of configurations. I have listed several options below.

1. Simultaneous mic preamplifier/EQ with separate guitar accompaniment via the instrument input.
2. Two separate guitar inputs using both DI inputs
3. Unity-gain Class A sweetening of a pre-recorded source via the mic preamplifier path while using the instrument DI for accompaniment.
4. The instrument DI can have the parallel input sent to a guitar amplifier. The guitar amplifier can be mic'd up and that signal sent through the mic pre path, eq'd if necessary, and then you have two (four if you include unbalanced outputs) separate outputs that you can send to your work station and monitoring, or whatever.
5. The instrument input can have either the balanced or unbalanced outputs looped back through the mic pre/EQ circuitry to add EQ and class A sweetening.
6. As both the instrument DI input and the mic/DI input have two outputs, balanced and unbalanced, this acts like a splitter and the outputs can be sent to two destinations.
7. While it is best, in normal circumstances, to keep the mic/DI path fader as close to the 0dB point for best headroom, there is nothing stopping one pulling that fader back and increasing the gain on the red bar knob to deliberately overdrive the preamplifier to get nice Class A grunginess from the GT DI path.

International dBFS Levels :-

On a technical note, 0dBm (an old telephone and early broadcast system of reference) is the voltage required to dissipate 1mW into 600 ohms = 0.775v ac. 0dBu (also 0.775v ac) just means that the impedance of the circuit is not specified. These, set in granite actual voltage levels, rather go out of the window when referred to dBFS figures associated with digital converters! (dBFS = **deciBels Relative to Full Scale**... i.e the clipping point of the system)

There is no single standard for setting where the 0dBFS point is...!!!

For example...

1. EBU R68 is used in most European countries, specifying +18 dBu at 0 dBFS
2. In Europe, the EBU recommend that -18 dBFS equates to the Alignment Level
3. European & UK calibration for Post & Film is -18 dBFS = 0 VU
4. UK broadcasters, Alignment Level is taken as 0 dBu (PPM4 or -4VU)
5. US installations use +24 dBu for 0 dBFS
6. The American SMPTE standard defines -20 dBFS as the Alignment Level
7. In Japan, France and some other countries, converters may be calibrated for +22 dBu at 0 dBFS.
8. BBC spec: -18 dBFS = PPM "4" = 0 dBu
9. German ARD & studio PPM +6 dBu = -10 (-9) dBFS. +16 (+15)dBu = 0 dBFS. No VU.
10. Belgium VRT: 0dB (VRT Ref.) = +6dBu ; -9dBFS = 0dB (VRT Ref.) ; 0dBFS = +15dBu.

0VU on the Aurora Stinger VU meter (the yellow LED) is +4dBu (1.228v ac) and normally -18dBFS on the meters of most digital converters. Any other digital reference could be used but the higher above -18dBFS you go, the headroom, both analogue and digital, drops by the same amount! Not good!

Specifications :-

Mic / DI Path

Gain :- -10dB to +80dB on the input sensitivity switch plus another 10dB in the fader.

Input Impedance :- 1.2Kohm (XLR I/P), 10Mohm (DI I/P)

Output Impedance :- < 50 ohms balanced

VU Meter range :- VU points from -33VU to +24VU in 3dB steps where 0VU = +4dBu = 1.228 vac.
Front panel trimpot to align the 0VU point.

Input headroom :- 26dB

Frequency response :- < +/- 1dB at 20Hz and 20KHz ref. 0dBu @ 1KHz

Noise :- +80dB gain = -45dB (EIN = -125dB)
0dB gain = -85dB

Headroom :- Maximum output > +26dBu

Distortion :- < 0.075% @ 1KHz

Instrument DI Path

Gain :- +30dB (+10dB with -20dB attenuator selected)

Input Impedance :- 1 Mohm

Output Impedance :- <50 ohms

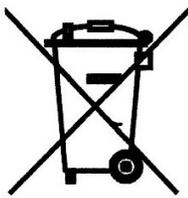
Distortion (FX off) :- <0.075% (FX on and fully driven => 18%)

Warranty: ONE YEAR PARTS AND LABOR LIMITED WARRANTY

Aurora Audio International warrants this Aurora Stinger unit against defects in workmanship for a period of one year and parts for a period of one year from receipt by the original end user. This warranty shall not apply to damage resulting from misuse including water damage, in-transit damage, fire damage, improper maintenance, dropping the unit and operation or storage outside the environmental specification for the product.

Only skilled technicians should repair the Aurora Stinger. Please contact Aurora Audio for technical advice. Aurora Audio is committed to helping you get best use out of the Aurora Stinger.

ROHS Directives



The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

The restrictions took effect in the E.U from 1st July 2006.

It is very important that the owner of any piece of equipment that contains even microscopic amounts of the listed hazardous substances (in relation to the weight of the unit) realize that the responsibility of its disposal rests with them. The unit should not just be thrown away at the end of its lifetime, whether that's 10, 20 or 30 years hence.

Please contact us at the address below and Aurora Audio will provide the necessary information for proper disposal.

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