

J C F A U D I O

More 'N Less

MORE 'N LESS USER MANUAL

Version 1.2



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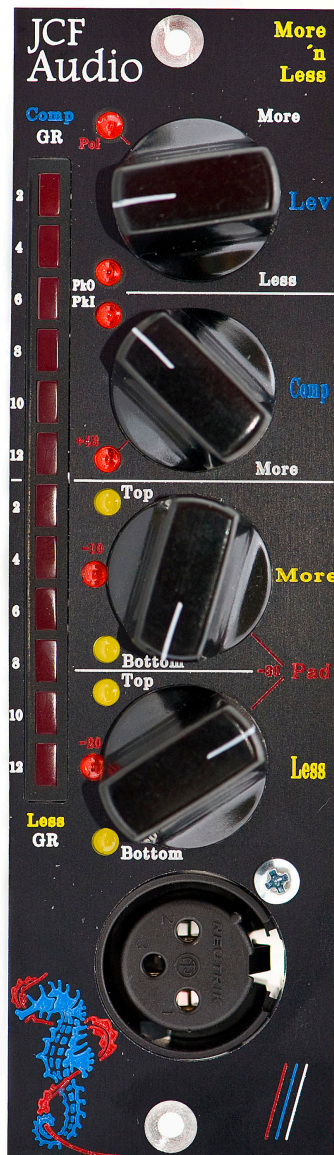
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More 'N Less

Overview

The More 'N Less is a 500 series Channel Amplifier with both mic and line inputs. No switching is required between these two inputs. It has an output level control, a single knob compression and simultaneous make-up gain function "Comp", a static boost equalizer "More", and a dynamic loss equalizer "Less".

The More 'N Less is aimed at the front of the recording chain where broad strokes of sound adjustment need to be made quickly without futz.



Feature list

- 500 series compatible (15 pin .156" edge type) so you get more functionality 'n less space
- Mic input (configurable front only OR front and rear)
- Concurrent line input (rear input only) - no switching required
- Line level +4 dBu analog input (Max +21dBu or +27dBu optional)
- **Cinomag** steel 1:2 output transformer for floating output, isolation, and drive
- "Comp" compression control for flat squeeze of program with simultaneous makeup and increasing ratio
- "More" static add only equalizer ("Top" - high frequency OR "Bottom" - low frequency)
- Separate "Less" frequency sensitive gain reduction ("Top" - high frequency OR "Bottom" - low frequency)

- Separate gain reduction metering for “**Comp**” and “**Less**” functions
- Output polarity control
- Four position pad to optimize drive of superb **Cinemag** mic input transformer
- Self contained remote fader operation (no external power required)
- 2 expansion headers for remote AC level control and/or JCF SSSDA option

0 dBu is referenced to 0.775 vrms for this manual

Front Panel Controls and Indicators

The 4 front panel controls control are pull/push switches in addition to being rotary controls. The individual functions are explained below.

Lev - This the output level control for the device. It's extents are “More” and “Less”. It is a plain DC control voltage to the VCA that drives the output amplifier. The position of this knob does not affect either of the unit's thresholds nor it's equalizer settings. This control should be used as a vernier adjustment between the pad values when using the device as a mic pre. When using the line input, unity will be with the knob indicator approximately aimed at midscale. The fully clock wise position provides 13 dB of gain with the Line input. and 5 dB of loss fully counter-clockwise. If you pull the control out, the “Pol” red led will illuminate and the polarity of the device's output will invert.

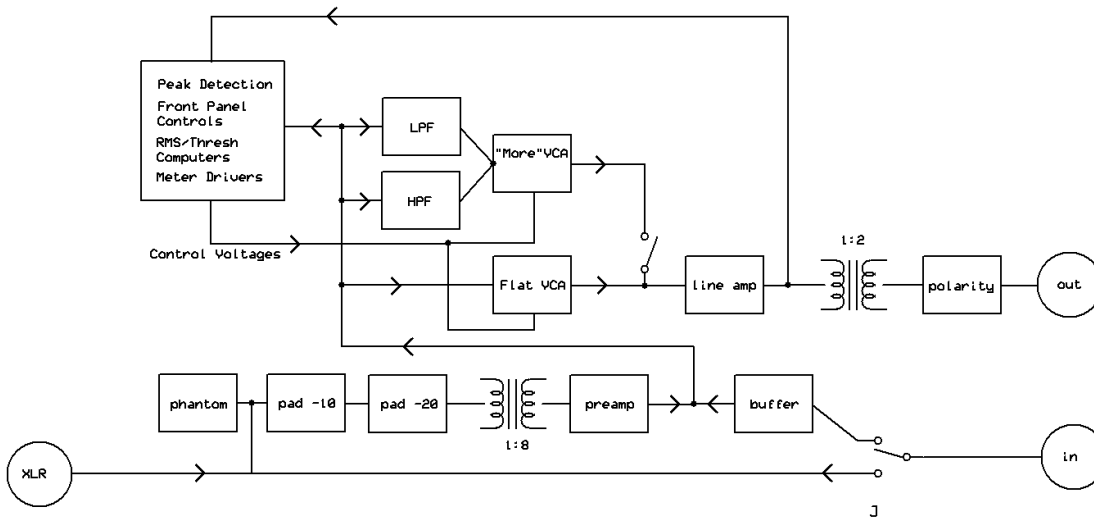
Comp - This control, traveling from none to “More”, will compress and simultaneously make-up loss induced by the compressor in a roughly proportional manner as to provide an easy way to decrease dynamic range. The ratio of the compression is increased along with the rotation of the control. If you pull the control out the “+48” red led will illuminate and a DC, positive, common mode potential of 48 volts (unloaded) will appear on the mic input if this power source is provided by the enclosing rack. (+48 and it's indication is defeat-able with a jumper on the left header. See jumper section)

More - This control is a static boost-only equalizer. Either high frequency or low frequency information can be boosted; not both. Either the “Top” or “Bottom” yellow indicator leds will light based on the direction of rotation of the control. It is difficult to accurately articulate the turn-over frequency of both bands (as is customary with equalizers) due to the More 'N Less's unique EQ topology. The center frequency moves downwards towards 1k with an increasing amount of boost of “Top”. The converse is true as well. The center frequency moves upwards towards 1k with an increasing amount of boost “Bottom”. If you Pull the control out the “-10” red led will illuminate and 10 dB of padding will be applied to the Mic input prior to the input transformer. This control can be used with the “-20” function listed below for a total Microphone pad of 30dB.

Less - This control is a dynamic equalizer or frequency selective compressor. The terms indicate essentially the same thing; a reduction of content in one frequency range with respect to the rest. Actuation of "Less Top" will cause a compression of content at frequencies above 7 kHz along with the "Top" yellow led indicator. This can be very useful as a broad De-Esser. "Less Bottom" will cause a compression of content below 250 Hz along with the "Bottom" yellow led indicator. Both directions of the "Less" control reduce at a moderately high ratio and a sharp knee. If you pull the control out the "-20" red led will illuminate and 20dB of padding will be applied to the Mic input prior to the input transformer. This control can be used with the "-10" function listed above for a total Microphone pad of 30dB.

PkI, PkO - These red led indications shows an over-range amplitude condition at two different points in the device. An input peak (**PkI**) can be fixed by reducing the level of the signal at the line input if that is the input used. If the Mic input is used, the input peak can be fixed by reducing the level of the sound source OR actuating additional padding. An output peak (**PkO**) can be fixed by simply turning the output level control "LEV" down. If the "LEV" control is all the way down then it's most likely you have too much "More" added in concert with a high level input.

Block Diagram



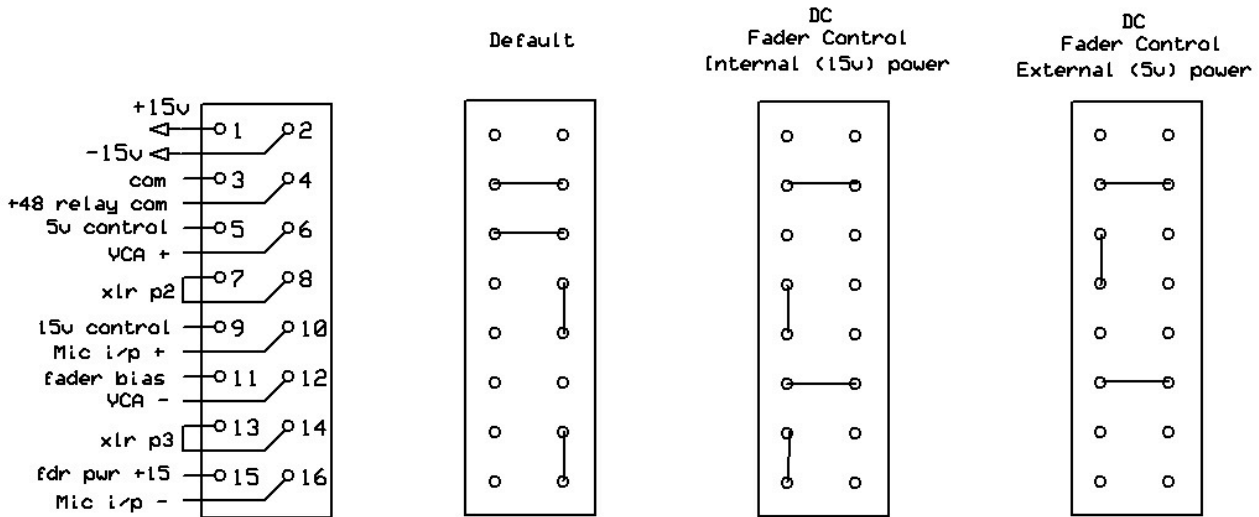
Jumper Settings

Mic/Line rear - These two jumpers are for selecting the function of the rear (edge connector) input. They are on the component side of the board near the rear edge connector; very close to the printed text "More 'N Less". The default is for the rear input to feed the line input circuitry. This can be changed so that the rear input feeds the mic circuitry. In this condition both the rear and front panel (XLR) inputs are in parallel and only one of which should be attached to a microphone at one time, generally speaking.

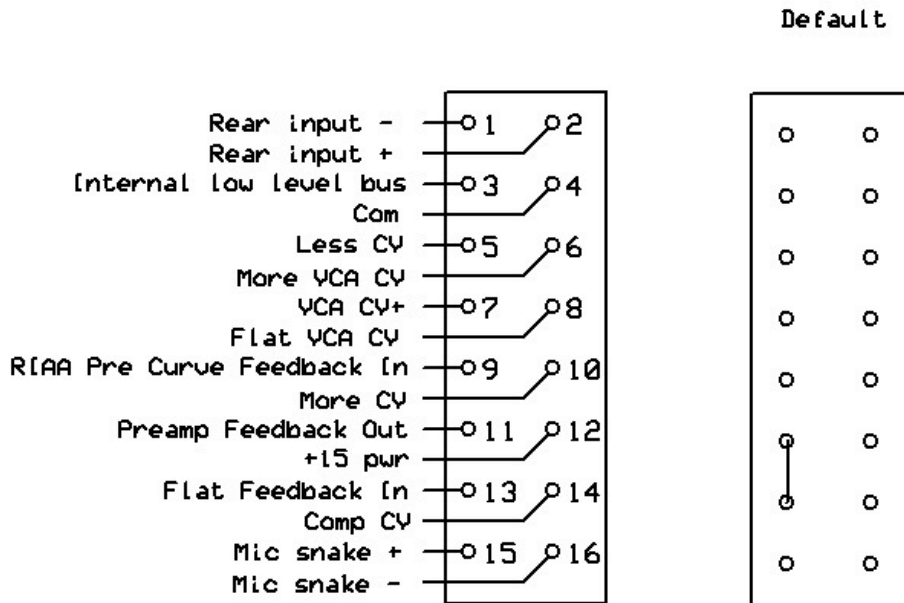
Left 16 pin Header - The left-most 16 pin header is located directly behind the front panel XLR on the component side of the board. There is a diagram of the signals on this header below. There are 3 jumpers that come factory installed on this header.

The first horizontal one (from top to bottom) enables the phantom power control. This can be disabled by removing the jumper so that 48 volts will not be applied to the microphone primary when the JCF SSSDA expansion is installed. The 2nd jumper serves no purpose in the default configuration. It is there as a courtesy for other modes.

The 3rd and 4th jumpers set up the front panel XLR as a microphone input. The front panel XLR can be set to be connected to a potentiometer for remote fader control. More information is in the **Remote Fader** section of the manual.

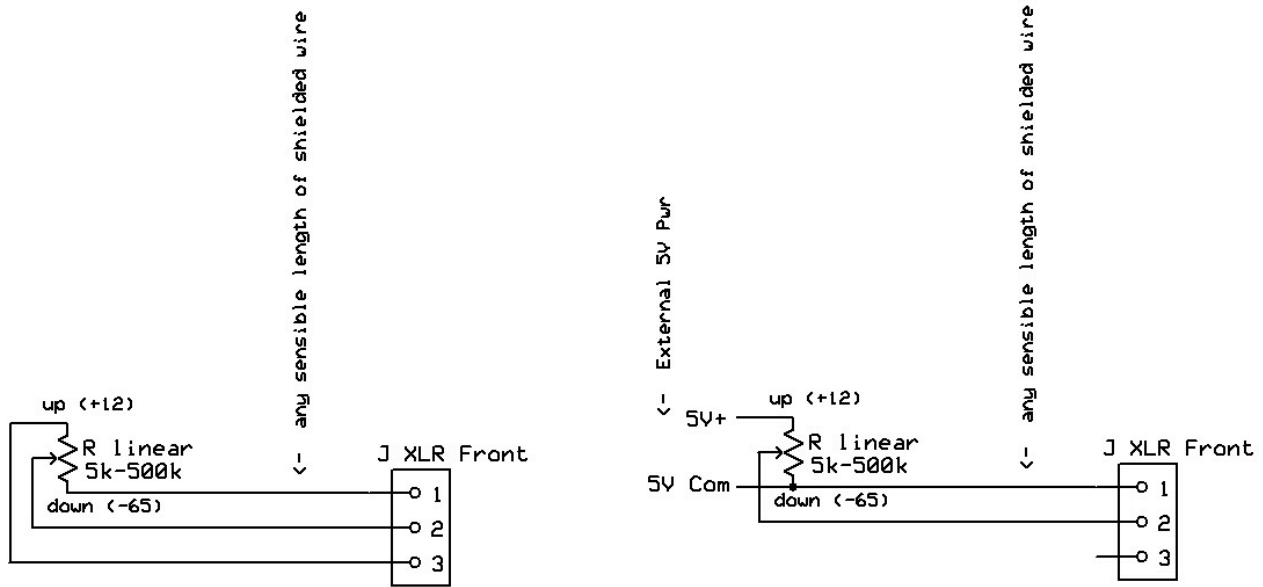


Right 16 pin Header - The right-most 16 pin header is detailed below. This header is mainly for factory testing. The JCF SSDA Digital to Analog converter card fits in this port as well with removal of the lone jumper. Serial #'s 150-159 do not contain the lone default jumper, nor RIAA preamp functionality.



Remote Fader

A low cost, linear potentiometer can be wired to the front panel XLR port to provide between 65dB of attenuation and 12dB of gain. This is for close approximation to the scales of fader travel on large format analog consoles and pro digital workstations. See picture below. Many modules can be paralleled as a very powerful analog console (Mic or Line input via rear; not both). Remote AC control is also a possibility here with additional electronics in the left header port.



JCF SSSA1

A one channel Digital to Analog converter will be available as an expansion to fit in the right 16 pin header on the More 'N Less. Digital AES signal can be input to the rear female XLR on the 500 rack rear. This makes for a modular D2A system that is scalable at sensible cost. All of the processing functions of the More 'N Less are available to the converted signal if desired (Comp, More, Less, Remote fader, etc) before analog output. Documentation will be in greater detail in the JCF SSSA1 manual.

Notes

Nothing wrong at all with using Mic and Line inputs simultaneously. However, this is not the intention of the unit. Be careful of overloading the internal bus with two sound sources (PKI indication).

It is recommended that the -20dB pad be actuated when using the line input only. This keeps noise from the microphone preamp to a level whereby the unit meets it's Line noise spec.

Specifications

Power Consumption:

+16v: 140 ma. max.

-16v: 140 ma. max.

+48v: 13 ma. max with Mic short

Microphone Preamp:

EIN: -116dBu (with 150 ohm source, 62 db of gain)

Max Gain: 66 dB unloaded output

Min Gain: 18 dB unloaded output

Input Z: ~1k ohms

Frequency Response:

Line: +/-1dB 6 Hz - 140 kHz (.775 VRMS out)

Mic: +/-1dB 6 Hz - 90 kHz (.775 VRMS out)

Noise:

Line Input Z: ~22k ohms

Line: 150R Source: -69dBu full atten (Pad: -20)

Min gain: -11dB

Max gain: +8dB

MOBC:

Unloaded: +28dBu

600R Load: +27dBu

THD Line: (Unity, unloaded output)

Line: 0.1% (0dBu out)

Line: 0.07% (+10dBu out)

Line: 0.12% (+20dBu out)

THD Mic: (48dB gain, unloaded output)

Mic: 0.04% (0dBu out)

Mic: 0.05% (+10dBu out)

Mic: 0.25% (+20dBu out)

Shipping weight:

3 lbs.

Shipping Dimensions

L: 10.5"

W: 11"

H: 3.5"

FCC Compliance:

This device complies with part 15 A CFR 15.5 of the FCC Rules as well as Subpart B. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Warranty

JCF Audio 1-Year Limited Warranty

JCF Audio LLC. "JCF Audio" warrants this product to be free of defects in material and assembly for a period of one year for parts and labor from the date of original purchase. This warranty is enforceable only by the original retail purchaser and cannot be transferred or assigned without express permission of JCF Audio.

During the warranty period JCF Audio shall, at its exclusive option, either repair or replace free of charge any product that proves to be defective on inspection by JCF Audio or its authorized service representative. In all cases disputes concerning this warranty shall be resolved as prescribed by law. To obtain warranty service, the purchaser must contact JCF Audio to obtain instructions where to send the unit for service. All authorized returns must be sent to JCF Audio or an authorized JCF Audio repair facility postage prepaid, insured and properly packaged. This warranty does not cover claims for damage due to abuse, neglect, modification 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.

Proof of purchase must be verified in the form of a bill of sale or some other positive proof that the product is within the warranty period upon JCF Audio's request.

JCF Audio reserves the right to update any unit returned for repair. JCF Audio reserves the right to change or improve design of the product at any time without prior notice.

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.

JCF Audio will not be liable for incidental, consequential, indirect or other damages resulting from the breach of any express or implied warranty, including damage to property, damage based on inconvenience, downtime, loss of personal property, and to the extent permitted by law, damages for personal injury or death.

Some states do allow the exclusion or 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 from state to state.

This warranty only applies to products sold in the United States of America. The terms of this warranty shall only apply within the country of sale. Without limiting the foregoing, repairs under this warranty shall be made only by a duly authorized JCF Audio service representative or by JCF Audio itself. For warranty information in other countries, please refer to the dealer or distributor.