

DigiMAX LT

Eight-Channel Mic-Preamplifier with
adat™ Lightpipe Output

USER'S MANUAL 1.0

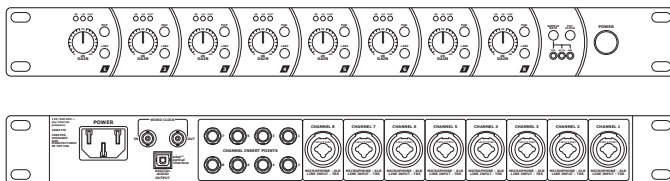


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1.1 INTRODUCTION

Thank you for purchasing the PreSonus DigiMAX LT Eight-Channel Mic-Preamplifier with adat™ Lightpipe Output. This preamp was designed using state of the art components to deliver crystal clear audio for an indefinite period of time. We believe the DigiMAX LT to be an exceptional sounding unit and an exceptional value.

Please contact us at 1-800-750-0323 with your questions or comments regarding this product. PreSonus Audio Electronics, Inc. is committed to constant product improvement and believes the best way to accomplish this task is by listening to the experts on our gear, our valued customers. We appreciate the support you have shown us through the purchase of this product.

Please pay close attention to how you connect your DigiMAX LT to your system. Improper grounding is the most common cause of noise problems found in studio or live sound systems. We urge you to scan this manual before hooking up your DigiMAX LT to familiarize yourself with its features and applications.

Good luck and enjoy your DigiMAX LT!

1 OVERVIEW

1.2 FEATURES

Dual Servo Mic Preamps

Each channel of your DigiMAX LT provides ultra low noise and wide gain control allowing the user to boost a desirable signal without increasing unwanted background noise.

48V Phantom Power

Each channel of the DigiMAX LT has 48V of phantom power available. When the phantom power switch is engaged, power is supplied at a constant rate. This assures optimum performance of your condenser microphone(s) and that it will be free of distortion associated with insufficient power. This switch is located on the front panel next to each gain knob.

-20dB Pad

A -20dB pad is available on each channel of the DigiMAX LT for reducing incoming signal levels. Using this pad can provide a more manageable signal from high output devices giving the operator greater control over the incoming signal and a much reduced chance of over-driving the input, thereby avoiding distortion.

Neutrik™ Combo Connectors

Each channel of the DigiMAX LT has a mic/line connector using the Neutrik™ combo connector. This revolutionary style connector lets you use either ¼" or XLR connectors in the same input.

Sample Rate Selector

The DigiMAX LT has a switch on the front panel that lets the operator choose the sample rate. It provides selectable rates of 32k, 44.1k and 48k.

Ext Clock

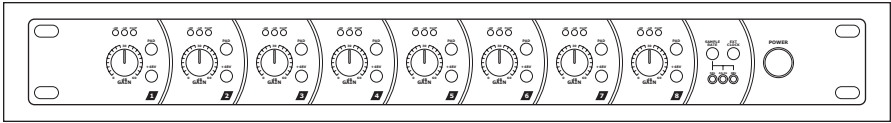
When the External clock switch is engaged the DigiMAX LT goes into 'chase' mode and automatically recognizes which of the three sampling rates is required for optimum synchronization.

Digital Optical Output

The DigiMAX LT has an adat™ (lightpipe) output that can be used with any commercially available digital optical cable. This cable can supply eight simultaneous outputs.

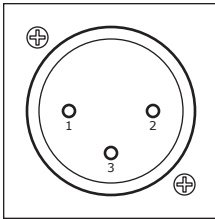
CONTROLS AND CONNECTIONS 2

2.1 FRONT PANEL



Notice that the front panel is divided into eight preamplifier sections, sample rate selector with indicators and external clock switch.

+48V



A switch labeled +48V is located next to each gain knob. This switch may be engaged to provide phantom power for condensor mics and any other device which may require phantom power by way of the XLR input. This power is supplied at a constant rate to allow use of all eight inputs simultaneously, without any degradation of audio quality.
Pin 1 = GND, Pin 2 = +48V, Pin 3 = +48V

Gain Control

This knob provides 44dB of gain to the processed signal. The amplifier has inherent gain of 10dB thus delivering a total gain possibility of 54dB.

-20dB Pad

A -20dB pad is available on each channel of the DigiMAX LT for reducing incoming signal levels. Using this pad can provide a more manageable signal from high output devices giving the operator greater control over the incoming signal and a much reduced chance of over-driving the input, thereby avoiding distortion.

The pad is available only for the XLR input on each channel. The pad does not work for the line level inputs.

Channel LEDs

The three LEDs found on each channel are provided to serve different functions:

-20dBu - The LED farthest to the left is labeled -20 and serves to monitor whether or not signal is present at the channel output.

-10dBu - The LED in the middle is labeled -10 and indicates a signal level of -10dBu

CONTROLS & CONNECTIONS 2

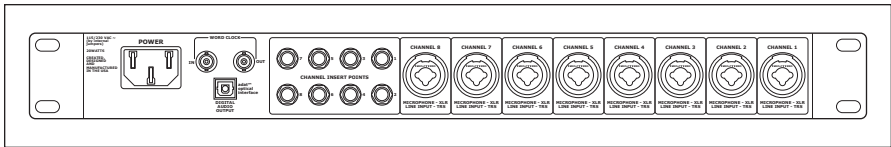
Clip - The LED labeled CLIP indicates at a signal level of +22dB. Care should be taken to avoid using signal levels that cause this LED to become active. Signal levels that reach or exceed this amount of output will cause undesirable artifacts (distortion) in the channel output signal that is being indicated by this LED. The signal level is reduced by rotating the channel's control counter-clockwise.

Sample Rate Selector

The section at the extreme right of the front panel contains the sample rate selector switch with LED indicators provided for 32k, 44.1k and 48k. This section also contains a switch labeled EXT. CLOCK. When this switch is engaged the operating clock rate of 32k, 44.1, or 48k will be determined by the incoming signal from an external device through the word clock in input on the back panel of the DigiMAX LT.

CONTROLS & CONNECTIONS 2

2.2 BACK PANEL BASIC LAYOUT



Digital Optical Output

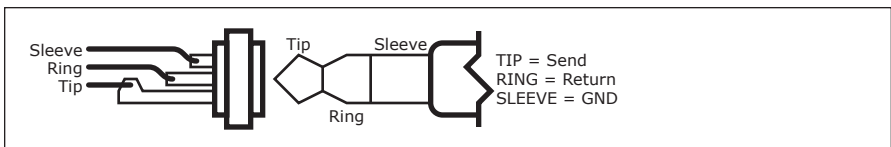
An adat™ optical output (lightpipe) is provided on the rear panel of the DigiMAX LT. Eight simultaneous 24bit outputs are possible when using the optical out.

Word Clock Out/In

The word clock output and input are accessed through separate BNC connectors. The internal sample rate can be set to send 32k, 44.1k, or 48k. The word clock in scans the incoming information and automatically synchs to the necessary sample rate.

Insert

Each channel of the DigiMAX LT has an insert that sends and returns the signal from the associated channel. This insert can be very useful for dynamics processing (such as compressing, limiting, etc.) or for monitoring purposes by helping in overcoming the time discrepancy that may be encountered in some digital recording situations. For more detailed instructions on uses and wiring of the inserts please see the application guide at the end of the manual. This insert is wired as follows:



3 OPERATIONS

3.1 DYNAMIC MICROPHONES

Dynamic microphones are characterized by lower output levels. Hence, more gain is needed to amplify a dynamic microphone to operating level. Occasionally it is necessary to add the -20dB pad to the microphone to avoid distortion (e.g. when recording percussion).

Do not use phantom power when using dynamic microphones.

3.2 PHANTOM POWERED MICROPHONES

Phantom powered microphones such as condenser and some ribbon microphones require external power to preamplify the microphone acoustic pickup. These microphones typically have much higher output than dynamic microphones. Hence the -20dB pad is almost always necessary when close micing to avoid clipping the amplifier.

3.3 LINE LEVEL INPUTS

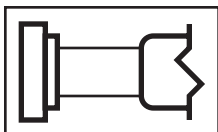
The 1/4" inputs on the DigiMAX LT are designed for use with line level or low impedance inputs not instrument level inputs. These inputs will work for line level devices such as keyboards, samplers, drum machines, CD players, etc.

3.4 APPLICATION GUIDE

Outboard Dynamics Processing Example

The DigiMAX LT has an insert on every channel that allows you to insert your own dynamics processor, such as a compressor, EQ, limiter, or etc. To do this, all you need is your dynamics processor and a TRS insert cable. This cable is Y-shaped, has a single TRS 1/4" jack on one end and two 1/4" TS jacks on the other end. The single end will look like a stereo 1/4" connector jack. This end of the cable plugs into the insert jack on the back of the DigiMAX LT. The other ends of the cable plug into the input and output of the outboard unit. If the outboard unit does not work immediately, you may want to try swapping the jacks that are plugged into the input and output of the outboard unit.

Insert Jacks As Analog Outputs Example 1



You may have noticed by now that the DigiMAX LT does not have a standard analog output. In the event that you want to have analog outputs as well as the lightpipe output, you can use the inserts as analog outputs. To do this, all you need is a 1/4" TS cable. Plug the cable in until you feel

it 'click' once. The cable will appear to be 'half plugged in'. Using the insert in this fashion will not break the signal chain and will allow the lightpipe output to function correctly.

Insert Jack As Analog Outputs Example 2

In the event that you do not need the lightpipe output, you can use the inserts as analog outputs. To do this, all you need is a TRS insert cable. This cable is Y-shaped, has a single TRS ¼" jack on one end and two ¼" TS jacks on the other end. The single end will look like a stereo ¼" connector. This end of the cable plugs into the insert jack above the input on the back of the DigiMAX LT. You would use the SEND end of the cable as the output cable.

By using the insert as an analog output with an insert cable, you will not be able to pass a signal through to the adat™ (lightpipe) output. The reason for this is that a signal is sent to a piece of outboard gear from the insert jack and then returned to the insert after being processed. So, in other words you are breaking the signal chain by using the send and not the return.

Using The DigiMAX LT As A Front End For Digital Recording Systems

The DigiMAX LT is the perfect front end for a digital recording system. The preamps on the unit allow you to boost the signal going to your recorder without adding extra, unwanted, noise. All digital recorders require that word clock be transmitted with a digital audio signal to ensure sample accuracy and synchronization. Word clock scans incoming information and automatically synchs to the necessary sample rate. In other words, word clock ensures that the recorder and the sending device (in this case the DigiMAX LT) send and receive digital audio at the same rate. If there is no word clock synch then you will hear pops, clicks, or weird digital dropout noise. Word clock can either be transmitted through the lightpipe cable (fiber-optic) or by BNC cable. If the DigiMAX LT is the master (sending word clock out to the recorder), then there are two possible connection scenarios. Both cases require that the EXT CLOCK button on the front of the unit be depressed (not pushed in) and that the appropriate sample rate be selected by using the SAMPLE RATE button on the front of the unit. The first case in which the DigiMAX LT is the master would require that the word clock output of the DigiMAX LT be connected to the word clock input of the recorder by BNC cable. The second case in which the DigiMAX LT is the master would require that the recorder receive word clock from the adat™ lightpipe fiber-optic cable. This second scenario requires that the digital recorder be set to receive word clock via lightpipe. This is often done by either hitting a button

3 OPERATIONS

on the recorder that says external clock or by setting a drop down menu option to receive sync from an external source or lightpipe.

In the event that you want to slave the DigiMAX LT to another device you would need to do two things. First, press the EXT CLOCK button on the front of the unit. Second, you would hook a BNC cable from the word clock output of the sending device to the word clock input on the back of the DigiMAX LT.

Bypassing The DigiMAX LT Preamps

The DigiMAX LT can be used as an analog to digital converter. The setup for this application requires a TRS insert cable. This cable is Y-shaped, has a single TRS ¼" jack on one end and two ¼" TS jacks on the other end. The single end will look like a stereo ¼" connector. This end of the cable plugs into the insert jack on the back of the DigiMAX LT. You would use the return end of the cable as the input cable. By plugging a device into the return cable, you would be entering the signal chain after the preamp. This would allow you to digitize a signal (such as a keyboard or CD player) without passing through the DigiMAX LT preamp.

The DigiMAX LT is not designed for direct use with record players - An RIAA (Recording Industry of America Association) phono preamplifier would have to be inserted in between the record player and the DigiMAX LT. If this RIAA phono preamplifier is not used then you would not hear an accurate representation of the recording.

The DigiMAX LT is designed for use with line level or low impedance inputs NOT instrument level inputs - The 1/4" inputs on the DigiMAX LT are lower impedance than our typical instrument inputs. In other words, if you were to plug a guitar into the DigiMAX LT directly, you probably wouldn't hear anything. Use of an impedance matching direct box will provide the correct impedance for instruments (ex: guitar, bass, etc.). However, you can plug microphones (dynamic or condenser), keyboards, samplers, drum machines, CD Players and etc. into the DIGIMAX LT.

4 TECHNICAL SPECIFICATIONS

Number of Channels 8

Input

Input Impedance, XLR Input 1.3k Ω
Input Impedance, Line Level Input..... 10k Ω
Connectors Neutrik™ Combo

Panel Controls

Gain 0dB to +40dB
Pad..... -20dB
Phantom Power +48V

Meters

Signal Present LED -20dBu
Signal Level LED..... -10dBu
Clip LED +22dBu

Output

adat™ Lightpipe Digital Optical 24bit

Insert (TRS)

Send (Unbalanced) 51 Ohms
Return (Unbalanced)..... 10 Ohms

Digital

Sampling Rates 32kHz, 44.1kHz, 48kHz

Performance

Headroom +22dBu
Freq. Response 20Hz - 50kHz (+/- .5dB)
THD + Noise (Unweighted) <0.009%
Noise Floor -94dBu
Signal to Noise..... >98dB
Analog Dynamic Range..... >120dB
Power Supply Rejection >98dB
Amplifier Type.....Dual Servo

Power Supply

Type Linear, Internal

TECHNICAL SPECIFICATIONS 4

Input 100/120/220/240VAC (Factory Configured)
Power80 Watts

Physical

Size1U Rack
Dimensions..... 19" X 1.75" X 9"
Weight 15 lbs.
Chassis Steel
Panel Aluminum

5 PRESONUS LIMITED WARRANTY

IN THE UNITED STATES

PreSonus Audio Electronics Inc. warrants this product to be free of defects in material and workmanship for a period of one year from the date of original retail purchase. This warranty is enforceable only by the original retail purchaser. To be protected by this warranty, the purchaser must complete and return the enclosed warranty card within 14 days of purchase. During the warranty period PreSonus shall, at its sole and absolute option, to either repair or replace, free of charge, any product that proves to be defective on inspection by PreSonus or its authorized service representative. To obtain warranty service, the purchaser must first call or write PreSonus at the address and telephone number printed below to obtain a Return Authorization Number and instructions of where to return the unit for service. All inquiries must be accompanied by a description of the problem. All authorized returns must be sent to the PreSonus repair facility postage prepaid, insured and properly packaged. PreSonus reserves the right to update any unit returned for repair. PreSonus reserves the right to change or improve the design of the product at any time without prior notice. This warranty does not cover claims for damage due to abuse, neglect, alteration 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. 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. In no event will PreSonus be liable for incidental, consequential or other damages resulting from the breach of any express or implied warranty, including, among other things, damage to property, damage based on inconvenience or on loss of use of the product, and, to the extent permitted by law, damages for personal injury. Some states do not allow the exclusion of 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 and used in the United States of America. For warranty information in all other countries please refer to your local distributor.

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PRESONUS LIMITED WARRANTY 5

OUTSIDE OF THE UNITED STATES

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