



Miktek

MPA-201



**Class A Microphone
Preamplifier**



Owner's Manual

You've done, done it..... You've purchased a truly exceptional piece of audio gear! Congratulations and thank you for purchasing the MPA-201 Microphone Preamplifier from Miktek. We know there are a lot of pretty good low cost mic pres available today, but you're in an elite group of audio engineers where pretty good is just not good enough. Simply put, that's why we make our products.

In the following sections of this manual you will find a description of the MPA-201's features, step-by-step set-up and operating instructions along with detailed specifications. In addition, we've also included some simple explanations of applications for the MPA-201's features and functions. Most of us who've purchased the MPA-201 are already experienced engineers, so these may seem quite basic. However at Miktek, we want to encourage young or new engineers to use our microphones, or at least to read our manuals and learn something about recording and live sound. We know you're serious about your productions because you purchased such an outstanding audio instrument, and at Miktek, we're serious about providing superior products and service to our customers. We appreciate your patronage and hope you enjoy using your preamplifier as much as we enjoy making them.

Sincerely,

Michael Ketchell - Managing Director

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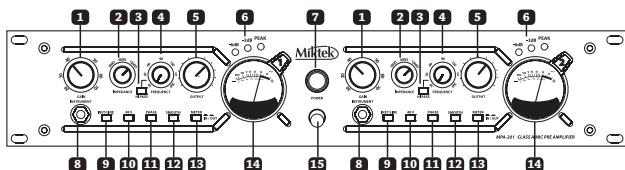
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Introduction

The Miktek MPA-201 dual channel, Class A microphone preamplifier provides a pristine signal path with a sweet and linear response that will please the most sophisticated listeners. With 70 dB of gain, 48-volt phantom power and variable impedance selector, the MPA-201 will highlight and enhance the sound of most any microphone. Each channel boasts a large analog VU meter that can be switched from input to output, plus an LED Peak output meter, making it easy to set a good level. The MPA-201 also features a Phase switch and variable High Pass Filter, which allows you to reduce unwanted low frequencies in your recording and help reduce stage rumble in live sound applications. The MPA-201 preamplifier features discrete transistors and six Miktek custom transformers, which produce a quality sound you would normally expect only from a vintage piece. The preamplifier features Direct Inputs on each channel, through a dedicated transformer, for recording instruments like guitar, bass and keyboards. Do you like to record your guitar or bass with an effects pod or plug-ins? Plug in to the MPA-201 first to capture that big studio sound that is far beyond what is possible with a standard audio interface. Perfect for adding a world-class signal path in front of your digital recordings, the MPA-201 is a must for any serious recordist.

- Class A, Discrete Transistor Vintage Design
- Linear response 1 dB down at 10Hz and 1 dB down at 100kHz
- Sweet sound from Custom Designed Transformers
- 48 Volt Phantom Power
- Variable High-Pass Filter
- Relay controlled Phase switch
- Smooth switch selects different output loading for “racked” and “in-console” sound
- Impedance selector allows for 300, 600, or 1200 Ohm load
- ¼-inch Direct Input with dedicated input transformer voiced for direct recording
- Large backlit VU Meters switchable to display Input and Output Levels
- +4 XLR Balanced Outputs
- Heavy duty metal construction featuring steel chassis and milled aluminum front panel in an attractive silver finish.

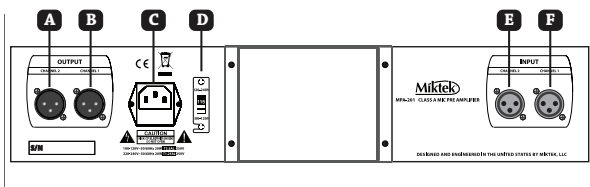
Front Panel Layout



Front Panel Layout

1. **GAIN** – Selects Input level gain from 20 to 70dB
2. **IMPEDANCE SELECTOR** – Used to switch in input impedance from 300, 600 or 1200 Ohm input load
3. **HI PASS Switch** – Used to Engage the High Pass Filter
4. **FREQUENCY** – Control used to set the Cut Off frequency from the High Pass Filter
5. **OUTPUT LEVEL** – Control knob to adjust output level
6. **PEAK METER** – Three-segment LED peak meter to show the absolute clipping point
7. **POWER LIGHT** – When illuminated indicates the unit is powered on and ready for operation
8. **INST/LINE INPUT** – ¼-inch input jack to connect instrument or line level signal
9. **INST/LINE switch** -Push switch to select Line or Instrument input
10. **48V PHANTOM POWER SWITCH** - Used to Engage 48 Volt phantom supply for power condenser microphones or active direct boxes
11. **PHASE Switch** – Used to select normal or inverted Phase
12. **SMOOTH Switch** – Selects normal or Smooth mode
13. **METER Switch** – Used to assign input or output level to the VU Meter
14. **VU METER** – Displays the input or output level
15. **POWER Switch** - Mains power switch to power the unit on or off

Rear Panel Layout



Rear Panel Layout

- A. OUTPUT 1** – Male XLR connector for Channel One microphone input
- B. OUTPUT 2** – Male XLR for Channel Two microphone input
- C. IEC Socket** – Connect a standard IEC power mains cable
- D. VOLTAGE** switch – Used to select the Mains operating voltage.
IMPORTANT NOTE: Be sure to check the switch is set to the correct voltage used in your country.
- E. INPUT 1** – Female XLR connector for Channel One microphone output
- F. INPUT 2** – Female XLR connector for Channel Two microphone output

Setting Up the MPA-201

First, decide where you want to position the MPA-201. The unit can be mounted in a standard equipment rack, or can be set on a workstation desktop. If you are setting up on a desk top, be sure to install the included rubber feet.

Operating the MPA-201

Powering the MPA-201

The first time you use the pre amp, check to see the MAIN voltage switch is set to the voltage that is correct in your country. Now, with the power switch set to the OFF position, connect the included IEC mains power cable to the IEC socket located on the rear panel. Next, connect the IEC Mains cable to a compatible main power outlet. It is always a good idea to start with the OUTPUT level controls turned all the way off (fully counter clockwise). Now you are ready to power up the unit by switching the MAINS switch to the ON position. The POWER light will illuminate indicating the unit is ready for operation.

Connecting Microphones to the MPA-201

In order to avoid any unwanted pops and clicks, it is always a good idea to turn the PHANTOM power switch to the OFF position before connecting your mic cables. ** For more information see the section “Using PHANTOM Power” below.* Connect your microphones to the Channel One and Channel Two Mic inputs using a standard balanced XLR cables.

Connecting Instruments and Line level signals

Each channel of the MPA-201 has a front panel ¼-inch Phones jack for connecting instruments or line level signals. If you are connecting an instrument like a electric bass or guitar, set the INST/LINE switch to INST. The instrument input features a custom designed transformer that has been optimized and voiced to add a bit of sweetness and color to the connected instrument. This is really great for recording straight into your DAW and eliminates that sterile sound sometimes associated with basic instrument inputs. You can use a standard ¼-inch to ¼-inch Instrument cable to connect here. If you are connecting line level signal like those from a DJ mixer or MP3 player set the INST/LINE switch to LINE. You can use a standard ¼-inch TS (Tip Sleeve) to ¼-inch TS instrument cable, or RCA to ¼-inch TS to connect here. The MPA-201 will accept balanced or unbalanced signals.

Operating the MPA-201

IMPORTANT NOTE: When you plug a cable the front panel INST/LINE the MIC input is switched off, so unplug the cable when you go back to using mic inputs.

Connecting the MPA-201 to Your DAW or Mixer

Next connect the CHANNEL 1 and CHANNEL 2 MIC OUTPUTS to your audio interface or mixer inputs. The MPA-201 outputs a line level, balanced signal so you can use a standard XLR to XLR cable or XLR to ¼-inch TRS (Tip Ring Sleeve) jack (often incorrectly referred to as stereo) cable to connect to your mixer or audio interface's line level inputs. You can send an unbalanced signal using an XLR to ¼-inch TR jack (often incorrectly referred to as mono), but we recommend using a balanced connection whenever possible. This can help keep the signal cleaner and quieter by taking advantage of the CMR (Common Mode Rejection) provided by the balanced signal to reduce induced hum from other gear.

Using the GAIN and OUTPUT Controls to Set a Good Signal Level

Now that you have made your connections you can begin to get your mic or instrument “gain staged” to get the best results. The MPA-201's GAIN control provides up to 70dB of gain, making it compatible with many sources. In order to help you set a good input level using the GAIN control the MPA-201 has two meters to display the level of your source. The PEAK meter has very fast ballistics so it is used to monitor the leading edge or transients of the signal, while the VU meter works to show the average level of the signal. If you are recording to a digital format you want to take caution to insure that the PEAK meter never hits the red +18dB LED, since this is normally where digital clipping occurs. Check that the METER switch is up to monitor the INPUT level. Turn the GAIN control knob up until you read about 0 on the VU meter. Next, press the METER switch down to select the OUT and use the OUTPUT level control to send to your mixer or DAW. Be sure to check your mixer's input level Peak meter or the graphical input fader on DAW and set a hot level without clipping. Again, if you are recording to a digital format you want to take caution to insure that the PEAK meter never hits the red +18dB LED.

Operating the MPA-201

Using the variable IMPEDANCE control

In order to properly reproduce the correct frequency response of any given microphone, the output of the mic and the input of the mic pre must have the correct impedance match. The general rule of thumb (and correct electronic design) is that the input impedance of the pre amp should be 5 times greater than the microphone's output impedance. Most modern microphones have an output impedance of 200–250 ohms, so an input impedance of 1200 ohms, which is typical on many pres, will match correctly. However, there are many wonderful vintage microphones and some new ones with, especially ribbon mics that have a lower impedance of around 50 ohms. The MPA-201 has a variable impedance control to change the input impedance from 1200 to 600 or 300 ohms allowing you to connect a variety of microphones correctly. Oh by the way,.... Sometimes you can get an awesome result by using the “wrong” setting. For example, let's say you have a nice condenser microphone with a sweet high-end airy lift with an output impedance of 200 ohms, but you want a slightly darker sound, set the input impedance to 600 or even 300 ohms. As always, experimentation can be the best teacher, so plug in and listen.

Using the HIGH PASS FILTER

Any good mic pre should have, at least, a basic high pass filter in order to reduce low frequencies you do not want, or that are just not produced from the signal source you are miking. A high pass filter, (sometimes called a low cut filter), will allow signals above a determined frequency to pass, while the frequency below that determined frequency will be attenuated. Using the High Pass can really help clean up, and many times tighten up the bottom end of your mix, or help eliminate low frequency rumble on stage in a live sound application. The MPA-201 has a variable high pass filter from 18 to 350Hz allowing you to adjust the low frequency cut off point. The MPA-201's variable High Pass Frequency control lets you tailor the low cut for the sound source you are recording. For example, you may want to set the high pass to 100Hz, when recording a vocal, or use a setting of 300Hz when miking a mandolin.

Operating the MPA-201

Using PHANTOM Power

The MPA-201 provides a standard 48-volt phantom power supply for using condenser microphones, active ribbon microphones and active direct boxes. Press the PHANTOM power switch in, and the LED will illuminate indicating the phantom power is active. IMPORTANT NOTE: As with any mic input, there will be a noticeable pop in the audio when plugging and unplugging a mic cable with the Phantom power on.

To avoid any possible damage to your gear or ears, be sure to mute your headphones or studio monitors when plugging and unplugging mic cables with the Phantom power on.

PHASE

The MPA-201 has a PHASE switch, which allows you to invert the polarity of the channel output. Inverting the phase on a microphone can be critical especially when multiple mics are used to capture the same sound source. One of the most common examples is when a snare drum is miked from the top and the bottom. Because the microphone diaphragms are facing opposite directions the two mics are out of phase and some or a lot of cancellation will occur.

SMOOTH

Sometime around the end of the 1970's and early 1980's, and perhaps before that, engineers and studio techs started to remove modules, particularly mic pre's and EQ's from their favorite large format recording consoles. This enabled them to take a smaller set of choice signal processors and fit them into smaller cases or standard 19-inch equipment racks. Many mic pre modules were stripped from their frame, however their outputs had a terminating resistor at the patchbay, which was left behind. Without the terminating resistor, the transformers start to saturate or ring when presented with high SPL broadband signals. For many sources and many applications we like this saturation! The SMOOTH function adds back these terminating resistors producing a subtle yet dramatic difference depending on the sound source. In any case, the SMOOTH function is another way to slightly color your sound, so check it out, give a listen and see if it works for the signal you are recording.

Specification

MPA-201 Specification

Type	Class A
Frequency Response	10Hz – 100 kHz
GAIN	20 - 70 dB
Controls	
Impedance	Variable 300, 600 and 1200 Ohms
High Pass	Variable 18Hz - 300Hz
Phase	Relay Switching
Phantom	48 Volts
Dimensions	19" x 14 x 3.75
Weight	16 lbs.

Specifications subject to change without notice.



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