



**QSP-20**  
**Quad Studio Preamplifier**

**Users Manual**

## Welcome...

Thank you for choosing the Buzz Audio QSP-20 Quad Studio Preamplifier. In this manual you will find important information regarding the use of the QSP and we suggest you do read it before using the unit to become familiar with all the controls and their function.

If after unpacking the QSP you find any damage to the unit 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 servicing, however we are confident this will not be necessary!

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## 1) Installation Precautions

The QSP-20 preamplifier uses Class A amplifiers and these plus the power supply do generate a fair amount of heat. Normally the QSP can be mounted into a rack without any special ventilation needs unless there are other units in the rack that also run hot.

Avoid mounting the QSP in close proximity to other units that have unshielded power transformers or switching power supplies. Pickup of noise from these devices may be a problem at high gain settings.

## 2) The Mains Input

The QSP-20 mains input can be set to run from 110V or 230V. On the rear panel you will find a circular voltage selector switch to set this. Generally the QSP mains voltage is set for the country to which it has been sent, but before powering up the unit, please check the voltage selector.

**POWERING UP THE QSP WITH THE WRONG VOLTAGE SETTING MAY CAUSE BURN OUT OF THE POWER TRANSFORMER!**

It is also important to fit the correct mains fuse. Below the IEC inlet you will see the fuse draw. Using a small flat blade screwdriver, you can flick open the draw and change the fuse if required. The fuse draw also has a place to hold a spare fuse (the square tube).

The correct fuses are;

110V = 2 amp slow blow  
230V = 1 amp slow blow

These fuses will either be fitted in the fuse draw, and/or supplied in an accessory bag with the QSP.

## 3) Audio Connections

On the rear panel of the QSP you will find the XLR Mic input and Line output connectors. On the front panel you will see four ¼" jack sockets for the high impedance inputs. These connectors are wired as follows;

### Mic In XLR

Pin 1 = Signal ground (shield)  
Pin 2 = Signal + (hot)  
Pin 3 = Signal - (cold)

### Line Out XLR

Pin 1 = Chassis ground (shield)  
Pin 2 = Signal + (hot)  
Pin 3 = Signal - (cold)

## Instrument Inputs

Tip (T) = Signal + (hot)

Ring (R) = Signal ground (shield)

Sleeve (S) = Signal ground (shield)

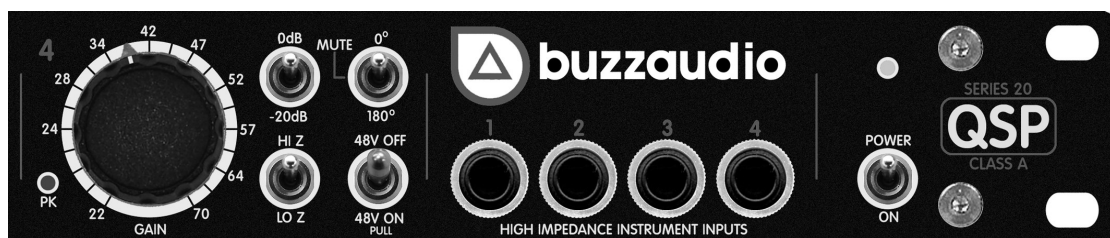
The QSP mic input is intended for use with microphones only, and connection of other sources is not recommended. It is important that the pin 1 (shield) is used and terminated at both the microphone and QSP ends of the cable.

The pin1 connection of the Line out is not part of the audio path, and is provided to shield the interconnecting cable. Leaving pin 1 free at one end of the cable can help reduce earth loops with other equipment.

The ¼" jack sockets are intended for use with instrument pickups. You can also connect the output from keyboards and drum machines, but watch the output level as these devices can potentially overload this input.

Please Note, inserting a jack into the ¼" sockets automatically selects this input to the channel as labeled, and the rear mic input is disconnected.

## 4] Controls and Indicators



As you've no doubt guessed by now, there are four identical preamp channels provided in the QSP, we will discuss the operation of Channel 4.

### GAIN

This 41 position stepped pot sets the amount of gain (or volume) applied to the microphone or instrument input, and is adjustable from 22dB to 70dB.

### 0dB/-20dB

This switch introduces a 20dB pad at the microphone input for use when you have high level inputs coming from your microphones (such as from micing up drum kits) and you need less gain than that provided on the GAIN control.

Please Note – the 0dB/-20dB switch is placed right at the input of the QSP's amplifier stages and it does cause a click on the output when activated. Turn down the GAIN control or MUTE the channel before operating this switch to minimize the volume of the click.



### **0°/MUTE/180°**

This 3 position switch is used to reverse the polarity of the QSP channel output signal or to mute the output signal (centre position). When selected to 180° the output signal is reversed to that of the input. This is useful in stereo recording where the mics may be spaced.

### **HI-Z/LO-Z**

This switch changes the impedance the microphones “sees” at the input to the QSP channel. Depending on the mic, this will result in subtle tonal changes to the sound. There is no right or wrong position of this switch, select for the sound you prefer. Note this switch has no affect to the INSTRUMENT INPUT.

### **48V OFF/48V ON**

If you are using a condenser type microphone that needs power, then this will do it. When switched to ON, 48V phantom power is applied to the mic in connector. To avoid accidental operation of this switch, it is fitted with a locking lever. You need to pull the lever toward you before the switch can be changed.

Please Note – operating the 48V switch will cause a loud thump at the output of the QSP channel. Always turn down the GAIN and MUTE the channel before operating.

### **PK**

This red led will illuminate when the output level of the QSP exceeds +22dBu. Although the QSP still has at least another 6dB of headroom beyond this, the device connected to it's output might not and clipping of the signal could occur. Most DAW audio interfaces will clip at this level.

### **POWER ON**

This switches the mains power to the QSP on and off. A yellow led tells you when it's on. The QSP channel outputs are not muted during power up and down, and there will be a thump. Use the MUTE controls to get rid of this or turn down your monitors.

## 5) Specifications

Min Gain Mic = +22dB (-2dB with pad in)  
Max Gain Mic = +70dB  
Min Gain Instrument = +12dB (-3dB with pad in)  
Max Gain Instrument = +60dB  
Maximum Output Level = +29dBu into 3k ohm load.

### Frequency Response

Mic = 10Hz to 300kHz @ 20dB gain (-3dB).  
Instrument = 10Hz to 120kHz @ 20dB gain (-3dB).

### Total Harmonic Distortion

(measured at -20dBu input, gain adjusted for +10dBu output level)

Mic = 0.15% @ 100Hz, 0.01% @ 1kHz, 0.005% @ 10kHz  
Instrument = 0.15% @ 100Hz, 0.015% @ 1kHz, 0.015% @ 10kHz

### Noise

EIN Mic = -131dB A wtg, 150ohm source Z.  
Signal to Noise Ratio Instrument = -76dB A wtg, input shorted.

CMNR Mic = -78dB @ 100Hz, -100dB @ 1kHz, -100dB @ 10kHz.

Input Impedance Mic = 4k ohms/1k2 ohms switchable.

Input Impedance Instrument = 1MEG ohms.

## 6) Service Information

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 QSP-20, contact your dealer or Buzz Audio for recommendations on what to do. The QSP is constructed with non-surface mount serviceable parts, this means most electronic faults can be easily repaired.

For on line support visit our web site; [www.buzzaudio.com](http://www.buzzaudio.com)

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Phone +64+4+472-3084. Email; [support@buzzaudio.co.nz](mailto:support@buzzaudio.co.nz)

## 7] Product Warranty

- **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 QSP-20 Quad Studio Preamplifier.

- **Standard Product Warranty**

Buzz Audio guarantees the QSP-20 Quad Studio Preamplifier to be free of defective materials and/or workmanship for a period of 1 year (12 months) 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 judgment, a manufacturing defect. This warranty does not extend to any product that has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced. The standard warranty is NOT transferable.

- **Product Warranty Extension**

The above Warranty may be extended to a period of 2 years (24 months) from date of sale provided the enclosed Warranty Registration card is completed and returned to the office of Buzz Audio within 4 weeks (28 days) from purchase date. Alternatively, you may Register your purchase on-line at our web-site [www.buzzaudio.com](http://www.buzzaudio.com). The Extended Warranty is transferable.

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HIGH IMPEDANCE INSTRUMENT INPUTS

1 INPUT.....

2 INPUT.....

3 INPUT.....

4 INPUT.....

0dB MUTE 0°

180°

-20dB

HI Z

+48V

LO Z

ON

PK

20

25

31

38

43

48

53

60

65

GAIN

ARTIST..... SESSION..... DATE.....

INPUT..... INPUT..... INPUT..... INPUT.....

POWER ON

**buzzaudio**

HIGH IMPEDANCE INSTRUMENT INPUTS

1 INPUT.....

2 INPUT.....

3 INPUT.....

4 INPUT.....

0dB MUTE 0°

180°

-20dB

HI Z

+48V

LO Z

ON

PK

20

25

31

38

43

48

53

60

65

GAIN

ARTIST..... SESSION..... DATE.....

INPUT..... INPUT..... INPUT..... INPUT.....

POWER ON