

QSC OCTAL INPUT ACCESSORIES

MODEL AT-1 PRECISION ATTENUATOR WITH INPUT TRANSFORMER

OWNER'S MANUAL

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The AT-1 Attenuator is an octal input accessory for all QSC Series One and Series Three amplifiers. It provides a way of making very accurate, repeatable level settings. It also provides an input transformer for maximum input isolation. A similar octal accessory, the A-1, should be used where precision attenuation without an input transformer is desired.

APPLICATION

With the amplifier's built in Gain controls at maximum, the voltage gain is determined solely by fixed precision 1% metal film resistors. To simplify gain calculations, we have adjusted the amplifier gain to the nearest whole number in dB in accordance with the following table. This gain was chosen to be as close as possible to 1 volt input sensitivity. The exact voltage sensitivity is also shown below.

Series	Model	Full Gain	Input Sens.	8-ohm power
Series One	1080	26 dB	0.838V	35W
	1100	26 dB	0.973V	50W
	1200	29 dB	1.00V	100W
	1400	32 dB	1.00V	200W
	1700	34 dB	1.02V	325W
Series Three	3200	29 dB	1.05V	110W
	3350	32 dB	1.00V	200W
	3500	34 dB	0.98V	300W
	3800	34 dB	1.07V	360W

The AT-1 allows the user to reduce the level in 16 exact 2 dB increments (32 dB total). Discrete metal film 1% resistors and rhodium plated silver alloy rotary switch contacts assure accuracy and reliability. The input transformer provides a passive balanced input with maximum isolation for best hum and RFI rejection. These benefits are especially valuable to the sound contractor who must meet tight specifications in large multidriver sound systems where an input transformer is desired for greatest reliability in severe noise environments.

INSTALLATION IN SERIES ONE AMPLIFIERS

1. Individual-Channel Installations.

Series One amplifiers have a single eight position DIP switch accessible through the rear panel. To send the input signal through the input attenuator, turn off (down) switches 7 and 8 for Channel One and 1 and 2 for Channel Two. All other switches should be off. Set all Gain controls in the fully clockwise (maximum) position.

Please note that you should not attempt to parallel two channels on a single attenuator as the extra loading will upset the precision of attenuation.

2. Parallel-Channel Installations.

In order to use two attenuators (one per channel) the amplifier inputs may be wired in parallel using the input barrier strip. Connect Ch. 1 "-" to Ch. 2 "-"; connect Ch. 1 "+" to Ch. 2 "+". Series One amplifiers made after April 1985 have been revised to permit this function to be accomplished by turning on the input programming switches numbers 5,6.

3. Bridged-Mono Operation.

Follow the normal instructions for setting up Series One amplifiers for bridged mono (see Owner's Manual). Install the attenuator in Channel One. All DIP switches should be off. Set the bridging switch, located separately, in the "Bridge" position. Set Channel One's Gain control in the fully clockwise (maximum) position. Channel Two Gain has no effect and should be kept off.

INSTALLATION IN SERIES THREE AMPLIFIERS.

Series Three amplifiers have two eight position DIP switches, one for each channel. Switches 5,6,7, and 8 on both channels are for setting the XLR input polarity and are not affected by this procedure. To send the input signal through an input attenuator turn off (down) switches 1 and 2 on each channel used with an attenuator. Set the front-panel Gain controls to the fully clockwise (maximum) position. If desired, the lockout covers provided with the amp can be installed over the front panel controls to prevent tampering.

Due to the extra loading which would upset the precision attenuation, it is not recommended to operate Series Three amplifiers in the bridge-mono mode from a single attenuator. A pair of attenuators (one per channel) can be used by wiring the inputs in parallel as explained for Series One (above). Reverse the polarity of the wiring to Ch. 2 and set the attenuators to matched settings for bridged-mode operation.

OPERATION IN ALL AMPLIFIERS.

Since the amplifier Gain controls have been set fully up, the actual voltage gain can be determined by subtracting the attenuation setting (shown on the label) from the full gain shown in the table above. Keep in mind that there is an insertion loss of 2.3 dB which is accounted for in the labeling of the attenuation scale. This is why the minimum attenuation position says "-2dB".

SPECIFICATIONS

FREQUENCY RESPONSE:	20 Hz to 15K Hz +/- .5 dB at +18 dBv input
DISTORTION:	Less than 0.3%, 50 Hz to 20 KHz at 0 dBv Less than 1%, 20 Hz to 20K Hz at +4 dBv Less than 1%, 35 Hz to 20K Hz at +18 dBv (0dBv = .775V)
INSERTION LOSS:	2 db +/- .5 db (Minimum Attenuation)
NUMBER OF POSITIONS:	16
STEP SIZE:	32 dB +/- 0.1 dB

OVERALL ATTENUATION TOLERANCE: +/- 0.2dB at any step over range of recommended input impedances.

MAXIMUM ATTENUATION: 32 dB

INPUT IMPEDANCE: Greater than 10K Ohms

RECOMMENDED SOURCE IMPEDANCE: Less than 600 Ohms

PRODUCT WARRANTY

QSC Audio Products guarantees the AT-1 to be free from defective material and/or workmanship for a period of three years from 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 via prepaid transportation with proof of purchase (sales receipt). This warranty provides that examination of the returned product must disclose, in our judgment, a manufacturing defect. This warranty does not extend to any product which has been subject to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced.

WARRANTY AND SERVICE REPAIR INSTRUCTIONS:

1. Pack the product safely making sure to include a copy of the sales receipt, your name, return address, and phone number. Mark the package- Attention Service Dept.
2. Ship the product prepaid to QSC Audio Products. We recommend UPS.
3. We will determine if the product is under warranty:
 - A. If it is we will repair and ship it back to you at no charge.
 - B. If it is not we will contact you and inform you of the charges. Upon your approval, we will repair the product and ship it back freight and service charges collect (COD).