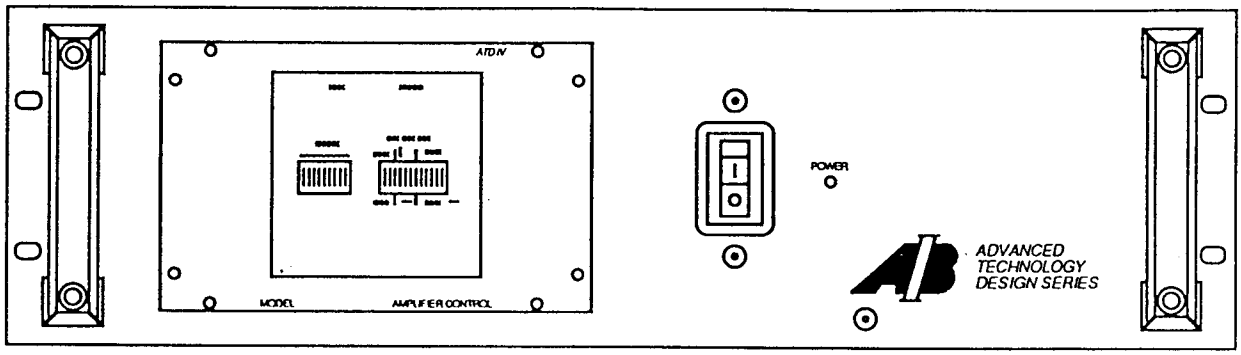
ADVANCED TECHNOLOGY DESIGN SERIES

421 & 821 AMPLIFIER SYSTEM



ADVANCED TECHNOLOGY

Advanced Technology Design Series IV from AB International is a modular system of high performance power amplifiers and electronic signal processing that may be precisely tailored to the specific requirements of professional loudspeaker components.

The 821A consists of power amplification, signal processing and precise control for high-performance subwoofer and full-range loudspeaker systems. Placing all signal processing and controls within a single chassis served by a common power supply reduces cost and avoids the interface and operational problems usually encountered with separate components. Included in the 821A are two summing inputs, two power amplifiers, selectable high pass and low pass filters, low frequency Thiele-Small alignment equalization and a precision step output attenuator.

The power amplifier stages in the 821A are fully complementary and operate from a six-level logic-gated power supply that adapts to the waveform of the input signal, providing only the DC rail voltages necessary for undistorted amplification. The result is tremendous output capability, cool operation and unconditional stability over an exceptionally wide range of load conditions. The output amplifiers may be operated in the dual or bridged mono modes, with up to 2000 watts peak output power available. A delayed-ON, instant-OFF muting control circuit allows internal supply voltages to stabilize before loudspeakers are connected. Connections to the loudspeakers are instantly removed, should the AC power be interrupted.

For users desiring specific non-standard features and/or signal processing, a wide range of options are available for this purpose. See 'Optional Equipment' brochure for details.

SPECIFICATIONS

Type:	Two-input, dual mono amplifier with on-board signal processing
Power output:	Dual Mode[1]: 500 w at 8 Ω 750 w at 4 Ω 1000 w at 2 Ω
821 ONLY	Bridge Mode[2]: 1000 w at 16 Ω 1500 w at 8 Ω 1500 w at 4 Ω (2000 w peak)
Voltage Gain:	32.5 dB, dual mode; 35.5 dB, bridge mode
Input sensitivity:	1.5 Vrms (referred to rated 8Ω output)
Input impedance:	15 kΩ, balanced or unbalanced
Noise level:	100 dB below rated outputs, unweighted
Signal processing:[3]	System high pass (20 or 30 Hz) 2nd-order M-derived w/adjustable underdamping for assisted Thiele-Small alignments, system low pass (50 or 80 Hz) 4th-order Bessel response
Controls:	Power, system level, high pass frequency select, VLF equalization, low pass frequency select, output mode (dual or bridge mono)
Input connectors:	(2) XLR-3 (bal.) with ground lift switch, (2) 1/4-inch (unbal.)
Power requirements:	120/240 VAC, 50/60 Hz, 500w (avg.) 1800 w (max.)
Physical:	5-1/4" (13.3cm) H x 19" (48.3cm) W x 13-1/2" (34.3cm) D; 46 lbs. (20.9 kg.)

1. Continuous power output at less than 0.1% THD, 20 Hz to 20 kHz, one channel driven.

2. Maximum continuous output power with both channels driven or in bridge mode is limited by line cord capacity and power supply storage capability.

3. A wide range of optional crossovers and signal processing is available. Please refer to 'optional equipment' for details.

BRIDGE MODE SWITCH 821 ONLY

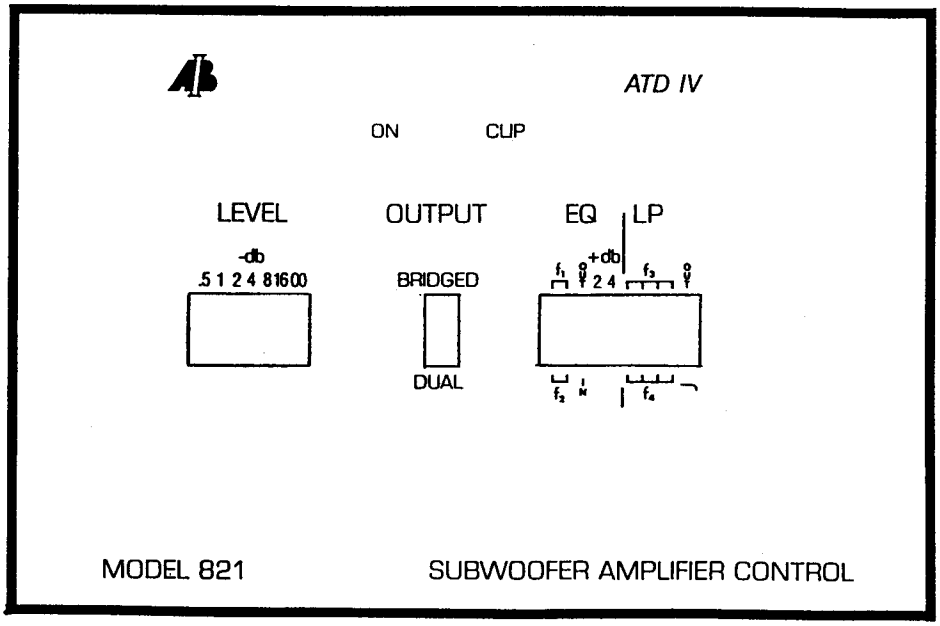
A switch is provided to operate the amplifier in mono (bridged mode). Refer to the caution note on this page when using this mode of operation. Bridged load impedances of less than 4 ohms should not be connected to the amplifier.

BRIDGED MONO OPERATION

1. Set the mode Selector to MONO.
2. Connect a mono input signal to channel one input jack.
3. Connect the speaker load to the two red terminals of each channels. Please confirm the (+) terminal of speaker to channel one and the (-) terminal to channel two.
4. Do not use the black terminals of each channel.
5. Connect the speaker impedance to 4 ohms or above.
6. To adjust level use channel one control and leave channel two level at "O".

CAUTION:

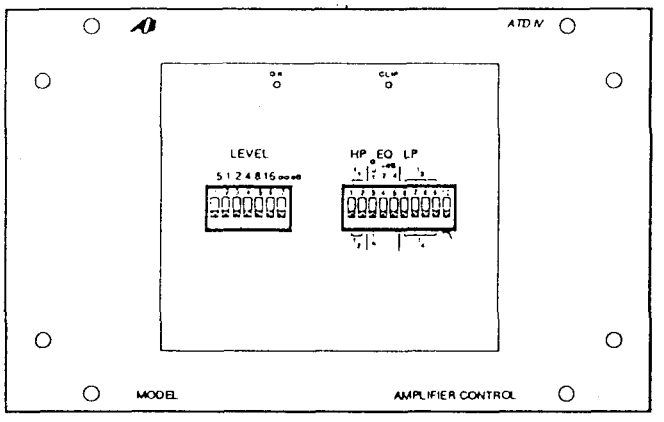
DO NOT PARALLEL THE TWO OUTPUTS OF EACH CHANNEL BY CONNECTING THEM TOGETHER, OR PARALLEL THEM WITH ANY OTHER AMPLIFIER OUTPUT. NEVER CHANGE A FUSE WITH THE POWER CONNECTED. UNDER NO CIRCUMSTANCES SHOULD THE AMPLIFIER BE OPERATED WITH THE COVER REMOVED. THERE ARE NO USER-SERVICABLE COMPONENTS INSIDE. TO AVOID A POTENTIALLY DANGEROUS SHOCK, KEEP THE COVER CLOSED.



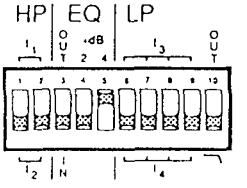
FEATURES AND CONTROLS

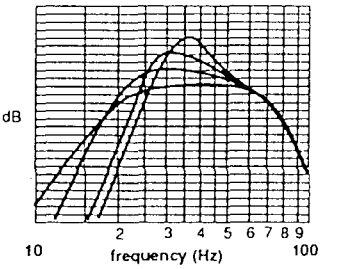
The 821A consists of two high-power amplifiers in the dual-mono mode driven by a signal-processing control module. The control module incorporates user-selectable high pass, low pass filters, monitoring and equalization.

Two isolated and summed balanced inputs enable bridging the L-R line-level signals in two-channel systems for subwoofer applications. In standard configurations, the high pass filters are 2nd-order (12 dB/octave) M-derived, with selectable corner frequencies of 20 or 30 Hz. Adjustable under-damping allows 2, 4 or 6 dB boost just above the high pass for electrically assisted loudspeaker alignments. The low-pass filters are 4th order (24 dB/oct.) Bessel linear phase, selectable between 50 and 80 Hz.

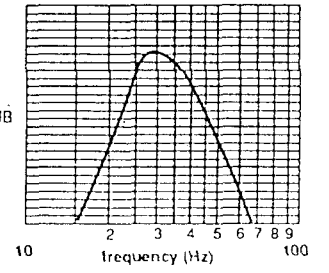


At right are the amplitude response contours of the system with 30 Hz high pass and 80 Hz low pass selected. Shown are 'flat', 2, 4 and 6 dB boost associated with the high pass filter. The equalizer-filter control is below.

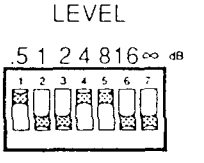




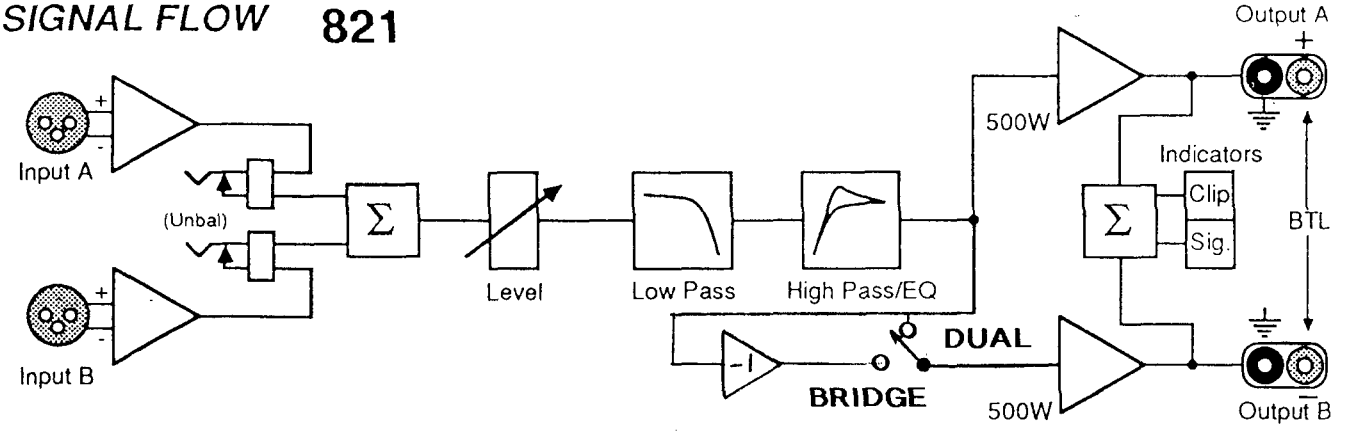
Above and right are sample control settings and the resulting response. 30 Hz high pass with 4 dB boost and 50 Hz low pass are shown.



At right is the precision output level control used in the 821A. The individual switch positions are calibrated for dB insertion loss, and selected values sum directly. 12.5 dB attenuation is illustrated.



SIGNAL FLOW 821



SIGNAL FLOW 421