**361B Mixer/Power Amplifier**

**Features:**
- Two Channel Mixer/Power Amplifier
- Full Range of Plug-In Accessories
- All Solid-State Design
- Transformerless Operation
- With 4 to 16 Ohm Loads
- Easily Installed 70-Volt Output Transformer
- Volume Compressor Optional
- 18 Watts of Power
- Frequency Response
- ±1 DB, 20-20,000 CPS
- Plug-In Microphone Preamplifier, Equalized Amplifier (Phono), or Line Transformer
- Compact, Rugged Design
- Minimum Heat Generation
- Extremely Low Noise Figure
- Shelf or Rack Mounted (With Mounting Frame)

**MIXER/POWER AMPLIFIER FOR:**
- PAGING, VOICE AND MUSIC SYSTEMS
- SCHOOLS — THEATERS — HOTELS — CLUBS — FACTORIES
- OFFICES — CHURCHES

The Altec 361B mixer/power amplifier is a solid-state unit designed to control, mix and amplify two independent input signals, providing 18 watts of power to 4-16 ohm loads. The 361B mixer/power amplifier provides complete versatility to meet the demands of the diverse sound distribution problems which confront the sound engineer. Equally effective with any complement of accessories, the 361B can be tailored to the needs of the small complex installations, providing professional sound at moderate cost.

Without accessories, one input may be used for a ceramic phono pick-up or a high-impedance announce microphone while the other input may be used for any high-impedance high level device such as a radio tuner or a tape machine. Either input may be used for low-impedance 600-ohm sources.

With accessories — plug-in devices such as the 1578A or 1588A microphone preamplifier, the 1579A equalized phono amplifier, or the 15095 transformer — the mixer/power amplifier will accommodate low-impedance microphones, magnetic pick-ups, balanced or unbalanced low-impedance lines, etc. The 16660 line transformer accessory provides the standard 70-volt speaker distribution system. This transformer is designed to mount on the rear of the amplifier in minutes with solderless interconnecting links and provides a 70-volt isolated output. The performance of this transformer is such that in excess of 18 watts at less than 2% distortion is available from 40 cycles to above 15,000 cycles. An additional accessory, the 14678A volume compressor assembly can be mounted on the rear panel where a socket has been provided for proper connection to the amplifier circuitry.

The power supply of the 361B mixer/power amplifier is equipped with self-resetting circuit breakers in the primary and the secondary transistor supply circuits to provide maximum component protection in the event of inadvertent speaker line short circuits, inadequate ventilation or other abnormal operating conditions.

The Altec 361B mixer/amplifier measures only 4½” high, 13½” wide and 8½” deep. The front panel is functionally designed and includes two-color appearance with control knobs having brushed aluminum inserts. Overall illumination of the front panel is provided by indirect means. For rack mounting applications the Altec 14965 rack mount assembly permits the 361B to be rack mounted using only 5¼” of vertical rack space.

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INPUT ACCESSORIES

The plug-in accessories for the input circuits of the mixer/power amplifier are carefully designed units, using solid-state circuitry for rugged dependable operation and high quality performance. These plug-in accessories make the proper input circuit instantly available for rapid installation permitting use of a wide range of input devices. Sockets on the rear of the mixer/power amplifier are pre-wired for the proper operating voltage and circuit connections, allowing the various plug-in accessories to be interchanged without rewiring, circuit or component changes and to be used in any combination to match properly, all commonly used input devices. The following descriptions are provided to explain the functions and performance of each of them.

1578A MICROPHONE PREAMPLIFIER

The 1578A microphone preamplifier is designed with a gain of 33.5 db. Sensitivity is 43 millivolts rms for an output of +8 dbm. Frequency response is ±0.5 db, 20-20,000 cps, or ±1.5 db, 15-50,000 cps. Source impedance is 150 ohms nominal, usable 30 to 20,000 ohms. Equivalent input noise is —122 dbm. The 1578A requires 12 vdc at 13 ma. The 1578A microphone preamplifier may be used with any high quality low-impedance microphone.

1588A MICROPHONE PREAMPLIFIER

The 1588A Transistor Preamplifier has a transformer-isolated input and is designed for use with microphones. The 1588A has a gain of 33.5 db and a frequency response of ±1 db from 30 to 30,000 cycles. Source impedance is 150/250 ohms and the load impedance is 600 ohms. The 1588A is encased in mu-metal providing effective magnetic shielding for the input transformer of 90 db. The equivalent input noise level is —122 dbm. Physically and electrically, the 1588A is interchangeable with the 1578A Preamplifier.

1579A PHONO EQUALIZED PREAMPLIFIER

The 1579A phono equalized preamplifier is specially designed for magnetic phono pick-ups to meet the RIAA standard. Sensitivity is 5 millivolts for 70 millivolt output at 1 kc. Output is +8 dbm at less than 0.5% thd (total harmonic distortion). Input impedance is 47,000 ohms and the power required is 12 vdc at 11 ma. Figure 1 illustrates the performance of the 1579A as referenced to the RIAA standard.

15095 LINE TRANSFORMER

The 15095 line transformer may be used as a bridging transformer for bridging a balanced 600 ohm line. The 15095 has 30 db of electro-magnetic shielding and a frequency response of ±1 db, 30-20,000 cps. The 15095 line transformer may also be used to perform a terminating function rather than a bridging function by the addition of a proper terminating resistor at the input of the mixer/power amplifier.
ADDITIONAL ACCESSORIES
16660 OUTPUT TRANSFORMER
The output of the 361B mixer/power amplifier is transformerless and, therefore, one side of the output is at ground potential. The Altec 16660 70-volt output transformer has been provided for standard speaker distribution systems where a balanced line is required. The 16660 transformer mounts on the rear of the 361B mixer/amplifier without soldering and no additional hardware other than that supplied with the amplifier is required. The performance of this transformer is such that in excess of 18 watts at less than 2% distortion is available from 40 cycles to above 15,000 cycles.

14965 RACK MOUNTING ASSEMBLY
When rack mounting of the 361B mixer/power amplifier is desired, the 14965 rack mounting assembly has been provided as an accessory. The rack mounting assembly includes a front panel for the amplifier which maintains the pleasing appearance and allows the rack to be pressure ventilated if associated equipment requires it. Rack mounted, the 361B will occupy 5½” of vertical rack space and the front panel is painted Altec Green.

14678A VOLUME COMPRESSOR ASSEMBLY
The volume compressor is rear mounted and is connected to the circuitry of the 361B mixer/power amplifier by means of a six-pin plug attached to the compressor assembly. A knob on the rear of the compressor assembly controls the compression threshold and is adjustable in steps of 2, 4, 8, 16 and off. The numbers correspond to approximate power output in watts. The compressor is rapid acting having an attack time of 10 milliseconds and has a compression ratio above threshold of better than five to one.
ARCHITECTS AND ENGINEERS SPECIFICATIONS

The mixer/amplifier shall be self-contained and shall employ all solid-state devices. Without accessories, the mixer/amplifier shall be capable of mixing two independent input signals originating from either a ceramic phone pick-up, high-impedance microphone or equivalent, and from either a radio tuner, tape machine or equivalent. Either of the two inputs shall be capable of accepting 600-ohm low-impedance sources. Input connections shall be made in one of two ways; direct connections to terminal strips provided for the separate inputs, or, standard phone plugs for the high-impedance input; magnetic phone input and tuner input. The mixer/amplifier shall have separate volume controls on each input and shall have a treble tone control common to both inputs. In addition, each input shall have a socket provided for the use of various types of plug-in accessories, enabling the mixer/amplifier to accept signals from low-impedance sources, magnetic type pick-ups and bridged low-impedance lines.

The mixer/amplifier shall have a frequency response of ±1 db, 10-20,000 cps, and shall deliver 18 watts at less than 2% thd, (total harmonic distortion), 30,15,000, cps, to a 4/8 ohm load. The output of the mixer/amplifier shall be of the transformerless type, capable of delivering 25 watts into loads ranging from 4 to 6 ohms. The output shall be capable of operating a 70 volt transformer for standard speaker distribution systems, and the 70 volt transformer accessory, specified elsewhere, shall be mounted on the rear of the mixer/amplifier and shall connect to the mixer/amplifier without the need of soldering, utilizing interconnecting links supplied with the transformer.

The mixer/amplifier shall provide operating voltages and a connecting socket for a transformer accessory accessory, specified elsewhere, which may be mounted to the rear of the unit, to provide voice compression when required. The mixer/amplifier shall have a self-contained power supply, operating from 120 vac, (requiring no more than 42 watts when deriving full power), and shall have self-resetting circuit breakers in both the primary and the transformer supply circuits. Fuse or manual resetting devices are not acceptable.

The mixer/amplifier shall measure no more than 4 3/4" high, 13 1/2" wide, and 8 1/4" deep. It shall weigh no more than 10 pounds and shall be dark green in color.

There shall be available, as a plug-in accessory to the mixer/amplifier, a transistor preamplifier with a nominal 150-ohm source impedance, usable 30-20,000 cps. Frequency response shall be ±0.5 db, 30-20,000 cps, or ±1.5 db, 15-20,000 cps. The transformer plug-in preamplifier shall have a gain of 33.5 db and sensitivity shall be 43 millivolts for an output of ±8 db. The plug-in transformer preamplifier shall allow any high-quality low-impedance microphone to be used with the mixer/amplifier.

There shall be available, as a plug-in accessory to the mixer/amplifier, a phone equalized transistor amplifier which shall meet the RIAA standard. Sensitivity shall be 5 millivolts for 70-millivolt output at 1 kc. Output shall be ±8 db at less than 0.5% thd (total harmonic distortion). Input impedance shall be 47,000 ohms and power required shall be 24 vdc at 1 ma.

There shall be available, as a plug-in accessory to the mixer/amplifier, a transistor preamplifier with a transformer-isolated input and with a nominal 150-ohm source impedance, usable 30-20,000 cps. Frequency response shall be ±1 db, 30-30,000 cps. The transformer plug-in preamplifier shall have a gain of 33.5 db and sensitivity shall be 43 millivolts for an output of ±8 db. The plug-in transformer preamplifier shall allow any high-quality low-impedance microphone to be used with the mixer/amplifier.

Any mixer/amplifier and plug-in accessories not meeting the above specifications shall be deemed unacceptable under this specification. The mixer/amplifier shall be Altec Lansing model 316B.

The transformer preamplifier shall be Altec Lansing model 1578A.

The phone preamplifier shall be Altec Lansing model 1579A.

Any mixer/amplifier and plug-in transformers isolated from the above specifications shall be deemed unacceptable under this specification.