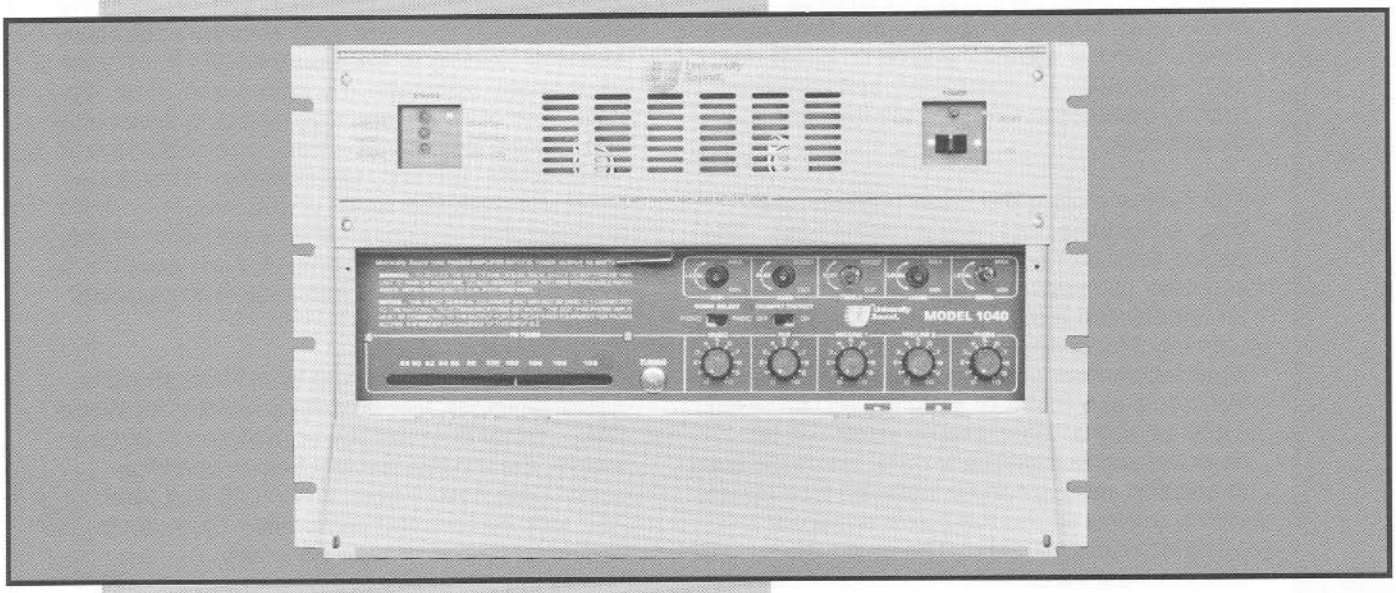
University Sound
A Mark IV Company

1010/1040
Paging Amplifier/Receivers



Product Data

- **40 watt (Model 1040) or 100 watt (Model 1010) operation**
- **Four paging inputs: 2 mic, 1 aux, and 1 phone access**
- **One music input, high impedance unbalanced**
- **Power outputs for 4 ohm, 8 ohm, 25V, or 70.7V speaker lines, on screw terminals**
- **FM Tuner with AFC**
- **Muting for page-over-music announcements, can be audio or remotely activated**
- **Music-on-hold Amplifier**
- **Treble and Bass EQ**
- **Remote activated chime and siren generators**
- **Wall or rack mountable**

Summary Specifications:

Power Output: 100 watts (Model 1010)
40 watts (Model 1040)

Frequency Response: 30 Hz – 20 kHz ± 2 dB

Distortion: Less than 2.5% THD @ 1 kHz

Output Regulation: 2 dB or less

Outputs: 4Ω and 8Ω unbalanced, 25V and 70V balanced

Tone Control, Bass: ±16dB @ 50Hz

Tone Control, Treble: ±17dB @ 15kHz

Trumpet Protect "On": -12dB @ 50Hz

Power Requirements:

AC Power: 120V AC 60Hz 1A average, 1.6A peak

Battery Power: 36V DC 3A avg., 5A peak

Dimensions: 19.0" W x 12.125" H x 5.0" D (48.3 cm x 30.8 cm x 12.7 cm)

Net Weight: 33 lbs. (15 kg) (1010)
24 lbs. (10.9 kg) (1040)

Shipping Weight: 38 lbs. (17.2 kg) (1010)
29 lbs. (13.2 kg) (1040)

Description

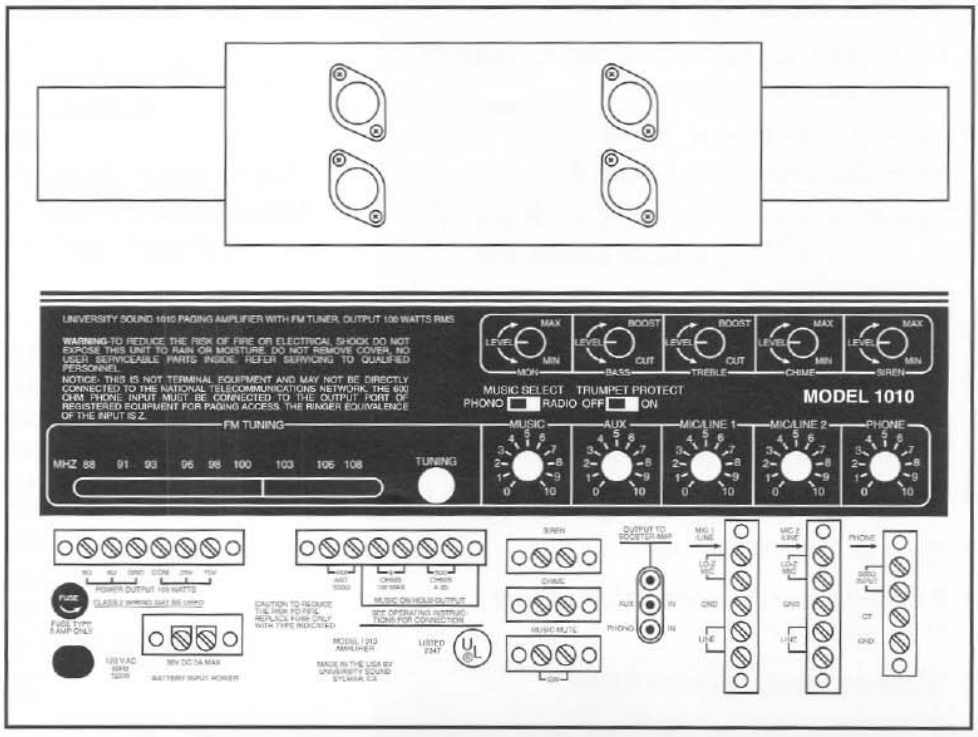
The University Models 1010 and 1040 are extremely versatile paging amplifier/receivers whose features make them applicable in a variety of business and industrial permanent installations. These units incorporate six important paging system functions: FM tuner, music-on-hold driver, chime source, siren source, 5-input muting line mixer, and a power amplifier (100 Watts RMS for the 1010, 40 Watts RMS for the 1040). Unlike a modular paging amplifier, the 1010 and 1040 are completely self-contained, making installation simple while lowering the overall cost.

The 5-input muting line mixer has two audio busses: a music buss, and a paging buss. The paging buss can accept input from four different sources: two separate balanced mic/line inputs, an unbalanced auxiliary input, and a 500/600 ohm input for phone paging access. The phone input transformer provides proper termination for the output of a PABX or switchboard. An audio signal on any of these paging inputs will be detected and automatically mute the music buss. In addition, muting can be triggered by a remote switch closing across the screw-terminals marked "MUSIC MUTE." The music buss accepts input either from the internal AFC-equipped FM tuner or the phono input, selectable from the front-panel "MUSIC SELECT" switch.

Other front panel controls include adjacent boost/cut knobs for treble and bass equalization. There is a "TRUMPET PROTECT" switch which activates a hi-pass filter. This protects the drivers from damage and avoids excessive amplifier loading at low frequencies. Two more level knobs attenuate the chime and siren signals, both of which are triggered by a switch circuit closed across the screw-terminals marked "CHIME" or "SIREN", respectively. The "MOH" knob controls the level of the music-on-hold amplifier that can drive either a 500 ohm music-on-hold card, or an 8 ohm 1 Watt maximum input to a Bell System music-on-hold standardized system.

The Model 1010 has a 100 Watt RMS amplifier output while the Model 1040 is rated at 40 Watts RMS. Other than the power rating and physical weight, the models are identical in specifications. Both have 4 ohm, 8 ohm, 25 Volt, and 70.7 Volt audio output terminals. They can be conveniently wall or rack mounted.

Front Panel Detail



Specifications

MOH Amplifier Specifications:

Power Output: 1 watt RMS @ 8 ohms (2.8V)
3 milliwatt @ 500 ohm (+4 dB m)

Distortion: Less than 0.3% THD @ 1 kHz

Frequency Response: ±2 dB, 30 Hz to 20 kHz

Hum and Noise: Below 1 watt, -65 dB

FM Tuner Specifications:

Tuning Range: 87.5 to 108.5 MHz

Ext. Antenna Input: 300 ohm balanced or 75 ohm unbalanced

Sensitivity: 3µV for 30 dB quieting

Frequency Response: ±1.5 dB 50 Hz to 15 kHz

Tone Generator Specifications:

Chime Signal: 800 Hz single strike

Chime Envelope: Exponential decay

Siren Signal: 700 Hz to 1.2 kHz sweep

Siren Sweep Rate: 5 Hz (200 milliseconds)

Muting:

Attenuation: -30 dB (music channel)

Activation: Automatic voice activated or manual with SPST switch

Overload Protection:

AC Power: Push to reset breaker

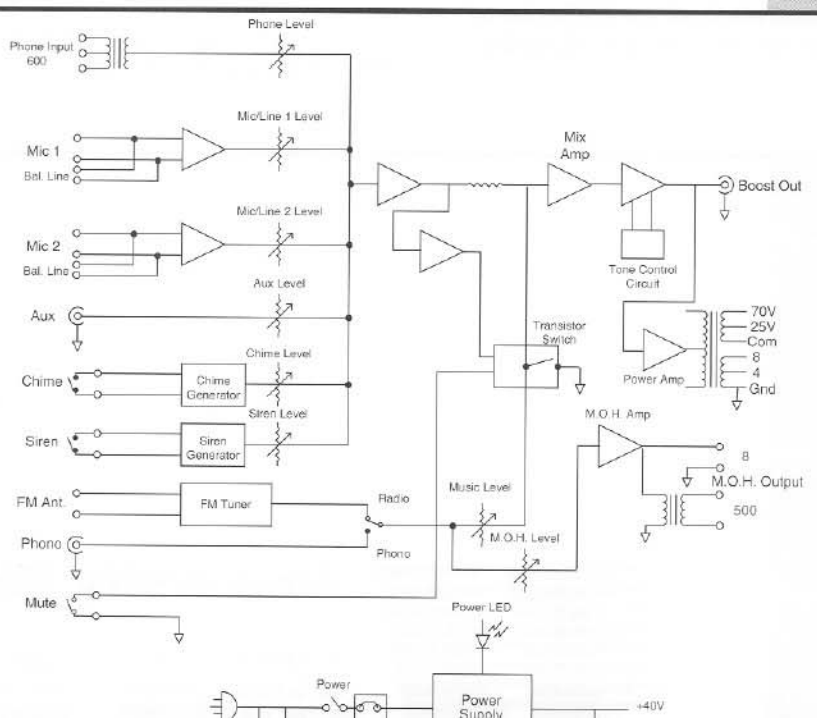
Battery Power: 5 amp fuse

Internal Circuitry: Dual slope current limit

Input Specifications

Input	Impedance	Sensitivity	Frequency Response	S/N Ratio
Aux	250K ohm unbalanced	300 mV	30 Hz to 20 kHz ± 2 dB	67 dB
Music	47K ohm unbalanced	275 mV	50 Hz to 15 kHz +6 dB -2 dB	64 dB
Line	10K ohm balanced	85 mV	50 Hz to 15 kHz ± 2 dB	60 dB
Mic	150 ohm balanced	0.7 mV	100 Hz to 12 kHz ± 2 dB	60 dB
Phone	600 ohm balanced	90 mV	200 Hz to 12 kHz ± 2 dB	66 dB

Block Diagram



Architect's and Engineer's Specifications

The amplifier/receiver shall have four paging inputs and one music input. The paging inputs shall consist of two balanced mic/line inputs, an unbalanced auxiliary input, and a 500/600 ohm input for phone paging access. For providing background music, there shall be a switch that selects between an AFC-equipped FM tuner and the music input, which shall be a 47K ohm unbalanced input. An audio signal present on any of these paging inputs will be sensed and cause the background music to be muted. The four paging inputs shall each have level controls on the front panel. The music input level and FM-tuner level will both be controlled by a single level knob, since the music channel will be fed from either one or the other of these sources. There shall be separate bass and treble controls. There shall be a "Trumpet Protect" switch to activate a hi-pass filter that protects horn drivers from excessive low-frequency power.

There shall also be a circuit for a chime signal, which shall be a 800 Hz bell-like tone with an exponential decay, and a signal source for a siren signal that shall be a fast sweep from 700 Hz to 1.2 kHz. These signal sources shall have separate activation circuits that operate when a connection is closed between two screw terminals on the front panel. When either signal is activated, the music channel will be muted. There shall be separate level control knobs on the front panel for the siren and chime levels.

There shall be a music-on-hold amplifier suitable for driving a 500 ohm music-on-hold card to a maximum level of +4 dB, or an 8 ohm output to a maximum level of 1 watt as required by a Bell System music-on-hold connecting arrangement. The music source for this driver shall be the same as selected by the Music Select switch for the background music. There shall be a separate control knob on the front panel to adjust the music-on-hold level.

For indication of system status, there shall be three LED lamps to display normal or battery operation, or overload condition. There shall be a push-to-reset breaker for overload protection.

The output power shall be 100 Watts RMS (Model 1010) or 40 Watts RMS (Model 1040). Total Harmonic Distortion (THD) shall be less than 2.5% at 1 kHz. Frequency response shall be within ± 2 dB from 30 Hz to 20 kHz. Power output shall be available at 8 ohm, 4 ohm, 25V, and 70.7V impedances. There shall also be a phono-jack output for feeding a booster power amplifier.

The unit shall measure 19.0" x 12.125" x 5.0" (48.3 cm x 30.8 cm x 12.7 cm), and shall operate from a 120V AC, 60 Hz line or from a 36V DC, 3A battery.

The amplifier/receiver shall be the University Sound Model 1010 or 1040.

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