

## Product Data

- 30 Watt (2303) 60 Watt (2306) or 120 Watt (2312) RMS rated power output
- Three input channels with individual level controls and mic-to-line level gain adjustment
- Power outputs for 4 $\Omega$ , 8 $\Omega$ , 25V and 70.7V speaker systems
- Five post-mix line-level connections: Pre-Amp out, Power-Amp in, Tape, Aux, and Bridge In/Out
- Phantom power on/off individually selectable for each input
- Individual voice-activated muting selectable for each input
- Link switch allows dedicated use of signal processing equipment
- Unified Line expandability

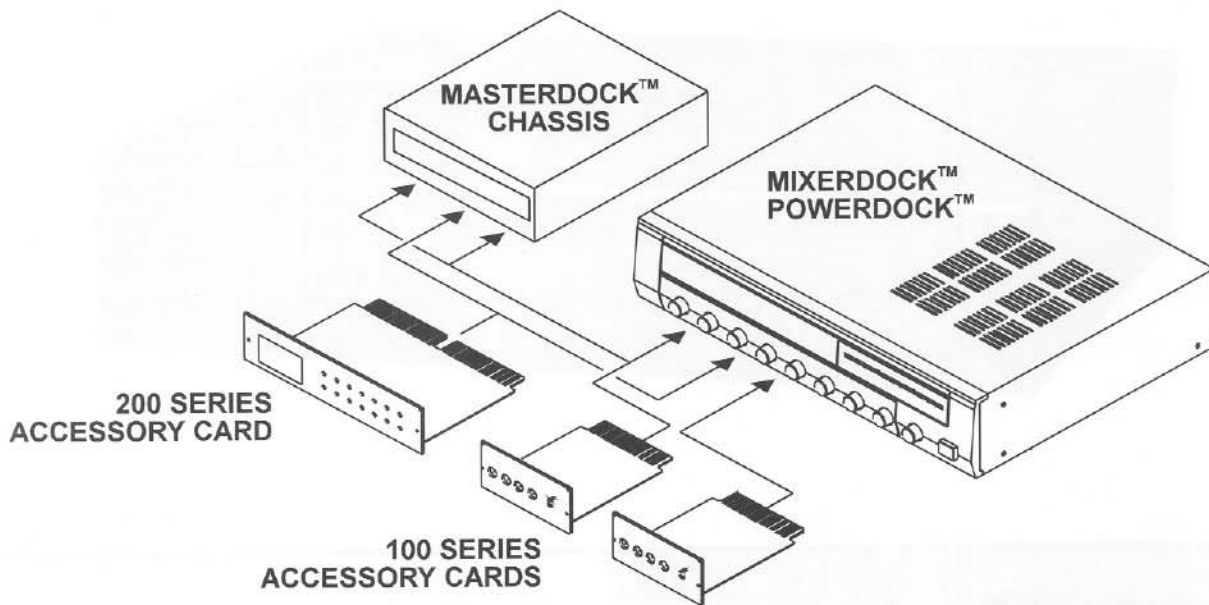
## Specifications:

<b>Power Output</b>	30 Watts RMS (2303) 60 Watts RMS (2306) 120 Watts RMS (2312)
<b>Power Outputs</b>	4 $\Omega$ , 8 $\Omega$ , 25V, 70.7V
<b>Power Bandwidth</b>	50 Hz - 20,000 Hz $\pm$ 1dB @ 0.5% THD
<b>Frequency Response</b>	20 Hz - 20,000 Hz, $\pm$ 1dB
<b>Equivalent Input Noise</b>	127dBu
<b>Signal to Noise Ratio</b>	>75 dB master vol max >90 dB master vol min
<b>Inputs</b>	3 transformer balanced Mic: .7mV @ 200 $\Omega$ Line: 100mV @ 10 K $\Omega$ Pwr Amp: 1V @ 10 K $\Omega$
<b>Equalization</b>	Treble, Bass, & Low-Cut
	Treble $\pm$ 10 dB @ 10 kHz
	Bass $\pm$ 10 dB @ 100 Hz
	Low-Cut - 7 dB @ 60 Hz
<b>Line-level Outputs</b>	Bridge: 2.2 K $\Omega$ impedance Tape: 3.3 K $\Omega$ impedance Aux: 4.4 K $\Omega$ impedance Pre-Amp: 4.4 K $\Omega$ impedance
<b>Circuit Protection</b>	AC line and output fuses
<b>Power Supply</b>	120 VAC, 60 Hz
<b>Dimensions</b>	
Height	4.0" (10.1 cm) 2 rack-units in 19" rack
Width	16.5" (41.9 cm)
Depth	16.0" (40.6 cm)
<b>Net Weight</b>	
17 lbs. (7.7 kg) (2303)	<b>Shipping Weight</b>
18 lbs. (8.1 kg) (2306)	23 lbs. (10.4 kg)
22 lbs. (9.9 kg) (2312)	24 lbs. (10.8 kg)
	28 lbs. (12.6 kg)

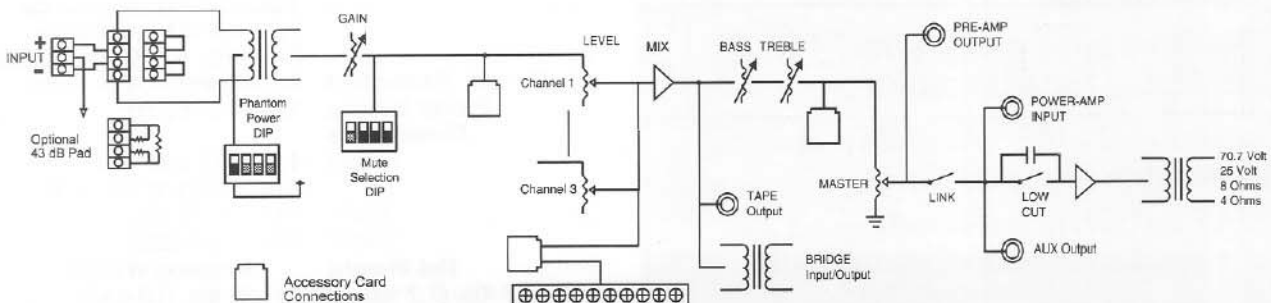
## Unified Features

As part of University Sound's Unified Electronics™ Line, the 2303, 2306 and 2312 PowerDocks™ are fully compatible with all of the Unified Accessory Cards. This allows the 2303/2306/2312 to be adapted to many different installations conveniently and effectively. All of the Unified accessories come on circuit cards that can be plugged into the accessory slot on the 2303/2306/2312

front panel. Any necessary external connections to installed cards are made on screw terminals on the rear panel of the 2303/2306/2312, preventing tampering and preserving the cosmetic appearance of the unit. For more information on other products in the Unified Line, contact your University Sound dealer or University Sound directly at the address on the back of this sheet.



## Block Diagram



## Description

The 2000 series PowerDock™ models 2303, 2306 and 2312 are three input channel mixer/amplifiers in rack or shelf-mountable enclosures. Both models are fully compatible with all Unified Line Accessory Cards, but unlike other "modular" mixers and amplifiers presently on the market, they are fully functional as supplied. Except for different power amplifier output ratings and weight, the three models are identical in all specifications and characteristics.

The front panel features three level controls (one for each of the three channels), treble and bass equalization controls, a master level control, a bar-graph output level LED display, a "power-ON" LED, and a power on/off switch.

Each of the three inputs are transformer balanced and can accept mic, line, or auxiliary level inputs. Three input trim controls on the rear panel allow individual adjustment of each input to match these different levels. An optional 43 dB pad can be installed in each channel to accept input levels of up to 15 VDC. The 3-screw terminal input connector can be replaced with XLR or RCA connectors without resoldering. The rear-panel Low-Cut switch activates a high-pass filter that attenuates the low-frequency part of the final mix.

Muting can be automatic signal-activated, or manually activated by a contact closure across two screw terminals on the rear of the unit. A sensitivity control sets the signal level at which automatic muting is triggered. Mute attenuation is also adjustable. Rear-panel DIP switches give the user complete control over which inputs will mute or unmute other inputs. This sophisticated muting circuitry provides flexibility not usually associated with traditional mixer/amplifiers. Each channel can be set to one of four different muting states: Priority, Slave, Inverted, or Inverted Priority. A Priority channel is always unmuted. A Slave channel will be muted when a signal is detected on a Priority channel. Inverted channels are normally muted, and are unmuted by a Priority channel. A channel set to Inverted Priority is normally muted, and is unmuted when a signal is detected on its own input or any other input set to Priority or Inverted Priority. A channel set to Off is completely unaffected by the muting circuitry.

Triggering the muting circuitry manually will affect each of these channel settings in the same way.

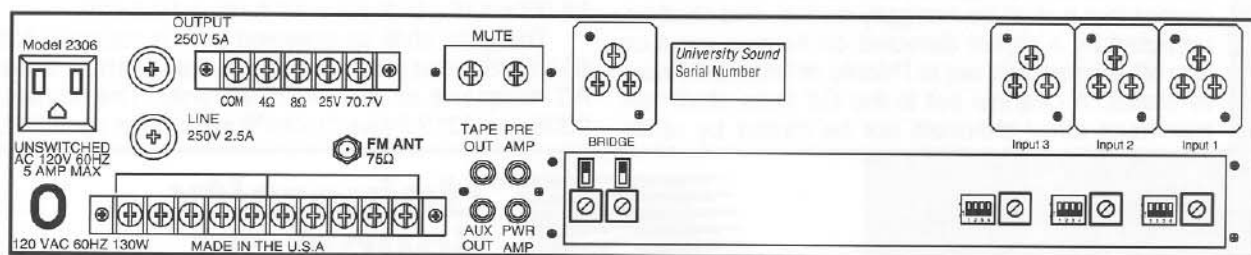
Each input of the 2303/2306/2312 is capable of providing 24 VDC phantom power for use with electret-type microphones. Unlike other mixers that link all inputs to the same phantom power switch, each input's phantom power status on the 2303/2306/2312 can be set separately. With this arrangement, electret mics can be used alongside other input devices that might otherwise be damaged by phantom power.

Four power amplifier outputs are provided: 4Ω and 8Ω outputs for connecting directly to speaker voice coils, and 25V and 70.7V outputs for use with constant-voltage distribution speaker lines. Connections to these outputs are made via a screw terminal barrier strip.

Five line-level mixer connections provide a number of ways to monitor or process the preamplifier signal. The PRE-AMP output and POWER-AMP input pair provide a way to parallel the 2303/2306/2312 with other mixer/amplifiers of different model or make. Both connections use standard RCA phono connectors. When using this pair of connections with signal processing equipment, the rear-panel LINK switch can be used to cut the internal connection between the pre-amp and power-amp to prevent unprocessed signal from getting to the power amp. The BRIDGE connection is a transformer coupled 3-screw terminal connector that can be used as an input or an output. The remaining two outputs consist of a TAPE output and an AUX output and appear on RCA connectors. The TAPE and BRIDGE outputs are pre-master level in the mixer circuit, and are unaffected by this control. The PRE-AMP out/POWER-AMP in and AUX output are post-master level control.

The 2303/2306/2312 is powered by conventional 120 VAC 60 Hz lines. Circuit protection is provided by an AC line fuse (1.5A for 2303, 2.5A for 2306, 3.5A for 2312). The power output stage of the amplifier is protected by an additional fuse (3A for the 2303, 5A for the 2306, 10A for the 2312).

## Rear-panel view





## Architect's, Engineer's and Consultant's Specifications

The mixer/amplifiers shall be three-input, monaural output solid state mixer/amplifiers. Other than power amplifier output and weight, the three models shall be identical. The units shall be compatible with all University Sound Unified Electronics™ Accessory Cards, but shall also be fully functional without the accessory cards. The units' module expansion slot shall open from the front panel, and include a protective cover.

Each of the units' three inputs shall be transformer balanced and be capable of independently matching microphone, line, or auxiliary input levels via rear-panel gain controls on each channel. There shall be an optional 43dB pad which can be installed in each channel to accept input levels of up to 15 VDC. There shall be a level control for every input on the front panel that will vary from full attenuation, to the gain set by the rear panel gain control for that input, as well as a master volume control that shall vary from full attenuation to no attenuation. The input connectors shall be 3-screw terminal connectors, any of which can be changed to XLR or RCA connectors by means of field replaceable input plates. TREBLE and BASS controls on the front panel shall adjust the equalization of the overall mix. A rear-panel LOW-CUT switch shall engage a high-pass filter after the TREBLE and BASS controls to further attenuate the low-frequency part of the overall mix.

The units shall be capable of both signal-activated and manually-activated muting. Manually-activated muting shall be triggered by contact closure across two rear panel screw terminals. There shall be five distinct muting states assignable to any of the three inputs: Priority, Slave, Inverted, Inverted Priority, and Off. Priority and Slave shall act in the conventional manner; a Slave channel shall be normally unmuted, and shall be muted while a signal is detected on any channel set to a priority muting status, or a connection is closed across the manual mute terminals. A Priority channel shall always be unmuted. Inverted channels shall be normally muted, but shall be unmuted by a priority channel or manual mute. A channel in the Inverted Priority status shall operate just as a Priority channel does, except that it shall be normally muted, and shall be unmuted by a signal detected on its own input or any other channels set to Priority or Inverted Priority status. A channel set to the Off state shall neither mute other channels nor be muted by other

channels. Each of the three inputs shall be independently assignable to any of the five mute states. There shall be a control to set the threshold level for the signal-activation circuit, and a control to set the level of attenuation of muted channels. Accessory cards installed in the units shall have access to the muting latch signal and shall respond to a mute activation according to the circuitry contained on that particular card.

The unit shall have four power amplifier outputs: 4 $\Omega$  and 8 $\Omega$  output for direct speaker coil connections, and 25V and 70.7V output for use with constant-voltage distributed speaker lines. All connections to these power outputs shall be on a barrier strip of screw terminals.

Five additional line-level connections shall consist of a Pre-Amp output (PRE-AMP), a Power-Amp input (PWR-AMP), a BRIDGE input/output, a TAPE output, and an AUX output. The Pre-Amp output and Power-Amp input shall both appear on standard RCA phono jacks. A rear-panel LINK switch shall open the connection between these two points, facilitating the use of external signal processing equipment. The BRIDGE input/output shall be transformer isolated and shall use a 3-screw terminal connector, and will be placed in the circuit between the mixer and the master volume control. It shall act as a 2.2 K $\Omega$  line-level access point, allowing a signal to be inserted before the master volume control, or a monitor of the mix unaffected by the master volume taken as an output. The unbalanced line level TAPE output shall also appear at the same point in the circuit as does the bridging input/output. This output shall use a standard RCA phono jack. The AUX output will be placed after the master volume control, carry an impedance of 1K $\Omega$ , and use a standard RCA phono jack.

For access to installed accessory cards, there shall be a barrier strip of ten screw terminals on the rear panel of the unit. Any necessary external connections to installed cards shall be made on this terminal strip.

The front panel shall consist of the three input level controls, TREBLE and BASS controls, a master volume control, a bar-graph output level LED, a "power-on" LED, and a power on/off switch. The front panel shall be constructed of black injection molded high-impact plastic, while the rest of the enclosure shall be of a black painted sheet steel. The enclosure shall measure 16.5"x 16.00"x 4.0" (41.9 cm x 40.6 cm x 10.1 cm).

The units shall be powered from a standard 120 VAC 60 Hz grounded power source. There shall be a three prong AC receptacle on the rear of the units. The Models 2303, 2306 and 2312 PowerDocks™ have been specified.