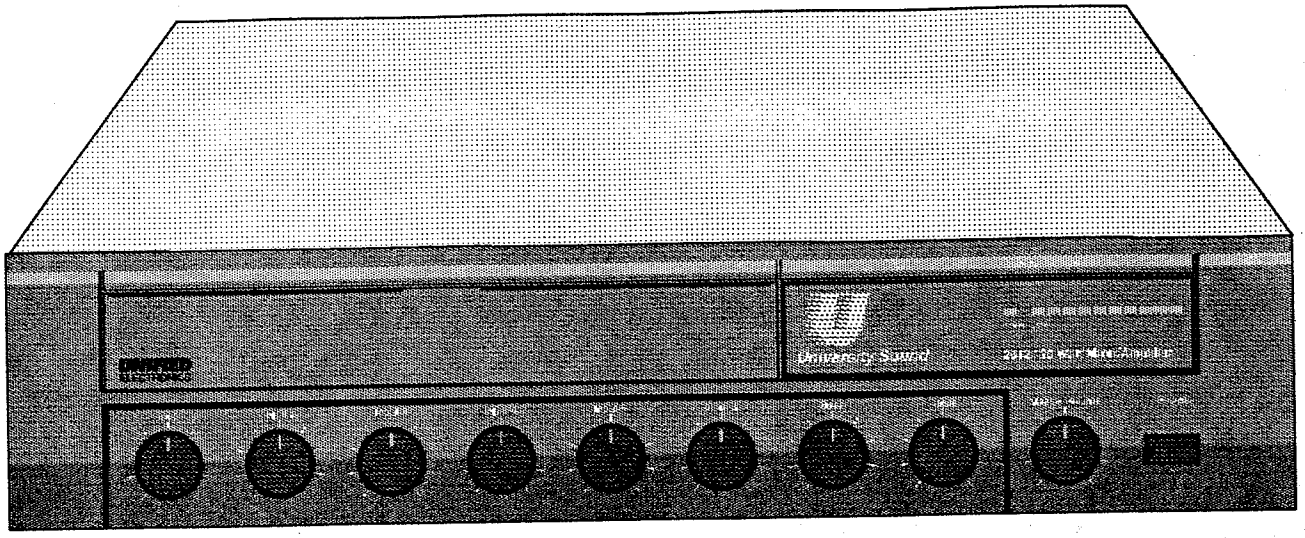
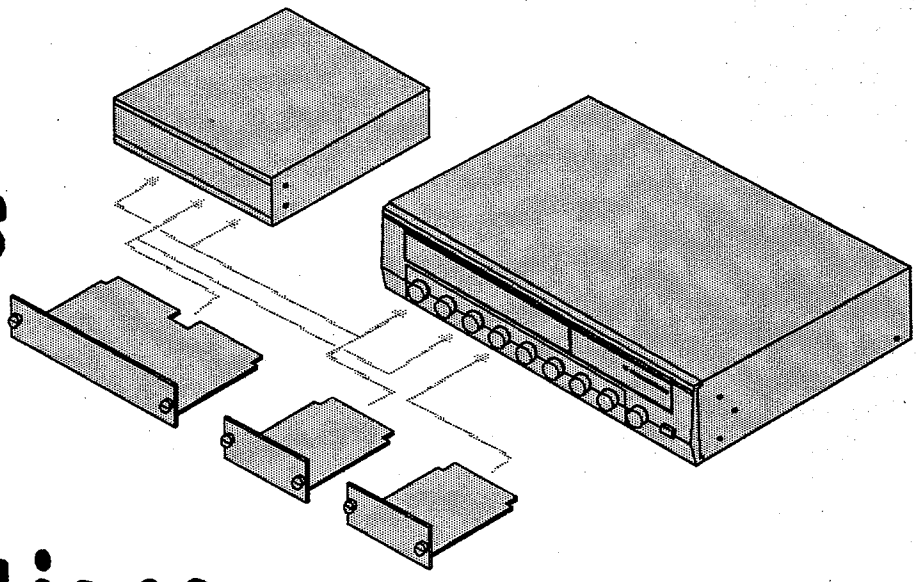
UNIFIED ELECTRONICS



Concept
Features
Benefits
Extras
Applications



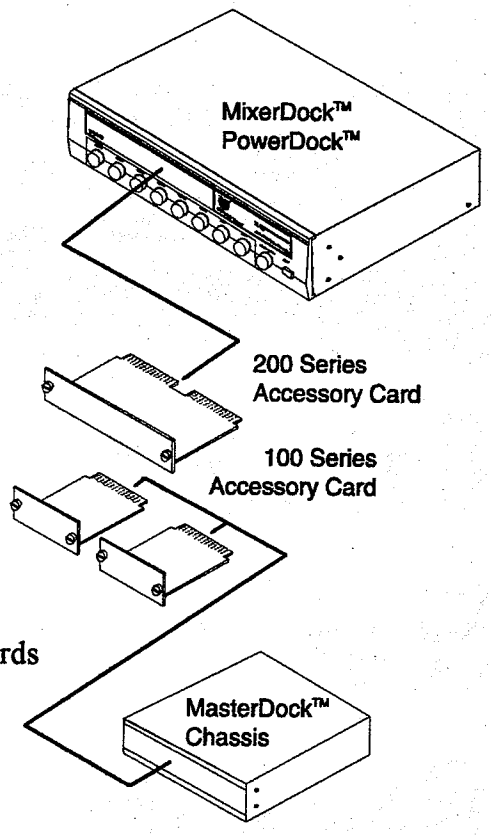
University Sound® a MARK IV company

The Concept:

The idea behind the *Unified Electronics Line* was to offer the sound contractor an alternative to the modular approach. With this in mind, *Unified Electronics* was created. By offering the contractor a packaged mixer/amplifier with the functionality of the modular units, and the capability to add additional functions on plug in "accessory cards"; a very flexible unit is realized. By eliminating the "module guessing game", the need to have available a number of different modules to satisfy the ever-changing needs of your customers, the Unified Electronics Line saves not only inventory and shelf space, but a lot of aggravation as well...

The Unified Electronics Line consists of mainframe units (MixerDock™ & PowerDocks™):

MX-8	8 channel mixer
2303	3 channel, 30W mixer amplifier
2306	3 channel, 60W mixer amplifier
2312	3 channel, 120W mixer amplifier
2603	6 channel, 30W mixer amplifier
2606	6 channel, 60W mixer amplifier
2612	6 channel, 120W mixer amplifier



plug-in Accessory Cards:

ACR-100	Audio Controlled Relay
ATG-100	Audio Tone Generator
DMT-200	Digital AM/FM Tuner
RVC-100	Remote Volume Control
UEQ100	5 Band Equalizer

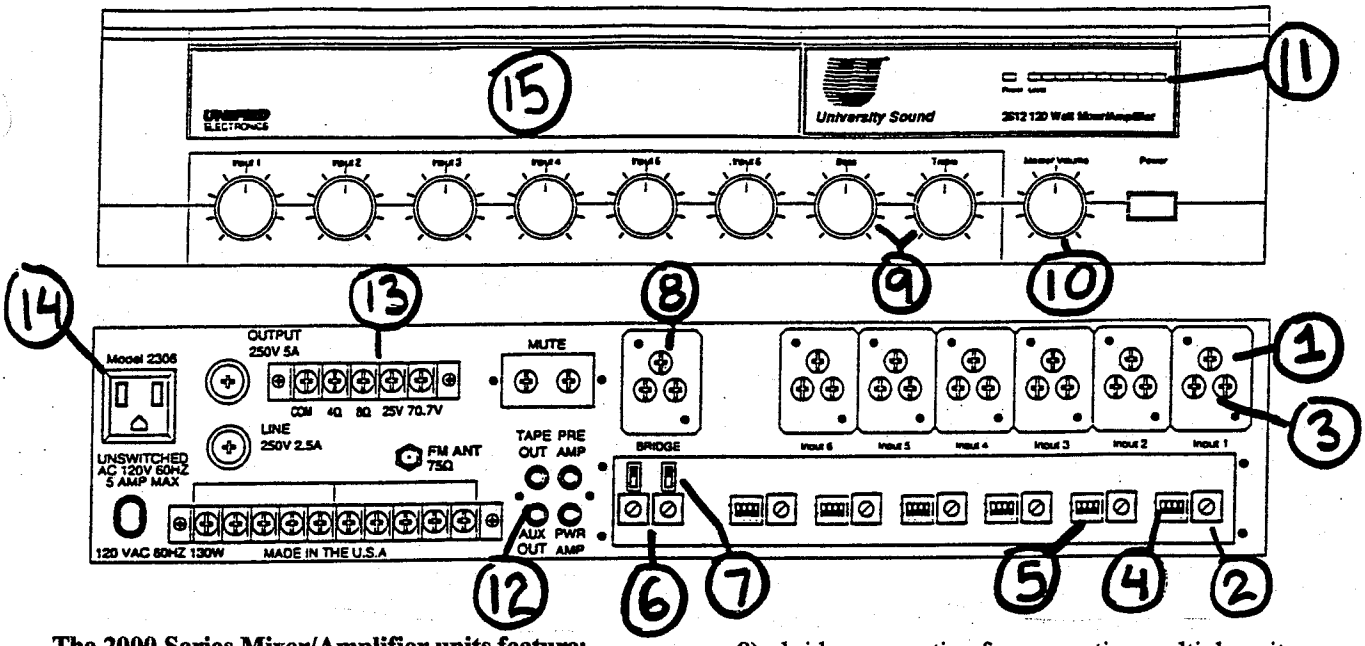
MasterDock™ Chassis components:

MDC-200	Stand alone chassis for Unified Accessory Cards
MDC-200RM	Rack Mount tray for MDC-200
MDC-200WM	Wall Mount brackets for MDC-200

and other options:

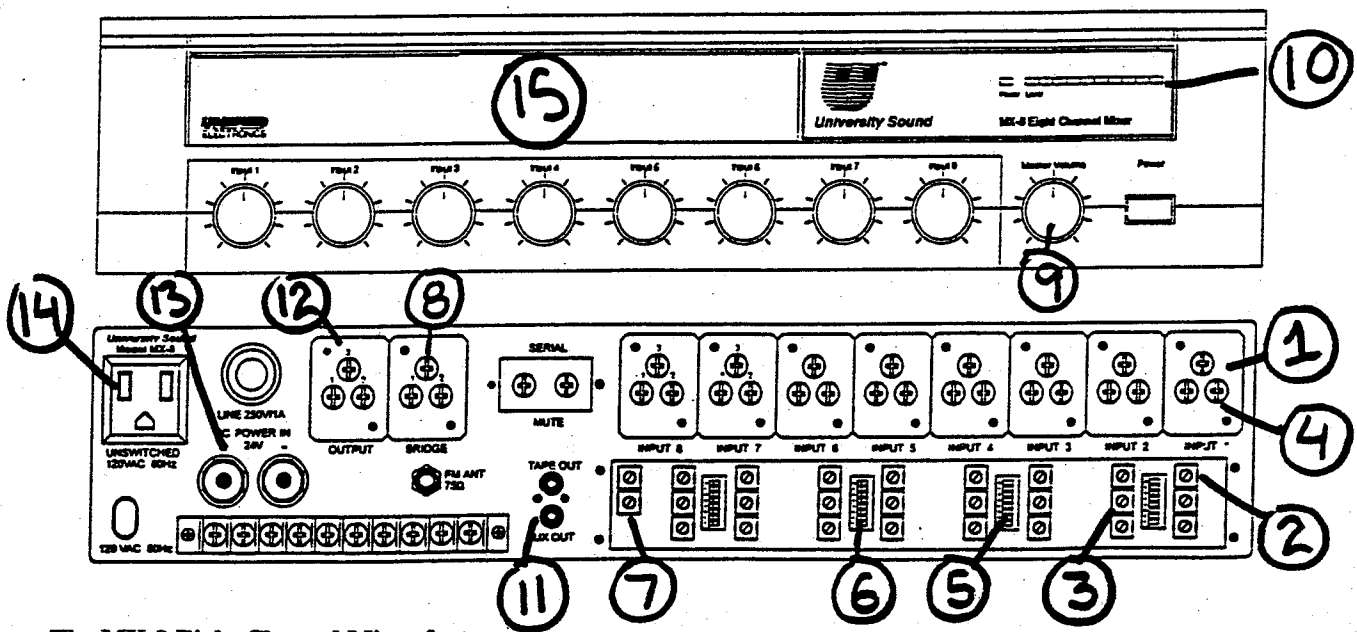
RM2000	Rack Mount Kit for the PowerDocks™ & MixerDock™
2000-RCA3	Input Connector kit - set of 3 dual RCA connectors
2000-RCA6	Input Connector kit - set of 6 dual RCA connectors
2000-XLR3	Input Connector kit - set of 3 female XLR connectors
2000-XLR6	Input Connector kit - set of 6 female XLR connectors

The Features:



The 2000 Series Mixer/Amplifier units feature:

1) transformer balanced inputs
2) input gain adjustment for mic to line level inputs
3) changeable input connectors (screw terminal, XLR, dual RCA)
4) selectable phantom power for each input
5) selectable mute status for each input
6) adjustable mute level and threshold controls
7) low cut and link switch
8) bridge connection for connecting multiple units
9) bass & treble controls
10) master volume control
11) 10 segment LED output level meter
12) tape, aux, and pre-amp outputs
13) transformer coupled 30, 60, or 120W output power
14) acccessory AC outlet
15) front panel expansion dock
16) outstanding specifications



The MX-8 Eight Channel Mixer features:

1) transformer balanced inputs
2) input gain adjustment for mic to line level inputs
3) individual high and low cut EQ controls
4) changeable input connectors (screw terminal, XLR, dual RCA)
5) selectable phantom power
6) selectable mute status
7) adjustable mute level and threshold controls
8) bridge connection for connecting multiple units
9) master volume control
10) 10 segment LED output level meter
11) tape and aux outputs
12) transformer coupled main output
13) 24VDC battery operation
14) accessory AC outlet
15) front panel expansion dock
16) outstanding specifications

The Benefits:

1) transformer balanced inputs

Sometimes you just can't help it - full transformer isolation is the only way to eliminate RF, hum, and interference problems!

2) continuously variable input gain (mic to line level)

6 mics; 4 mics & 2 lines, 5 lines & 1 mic, 3 mics & 3 lines... you get the picture. Configure the unit the way you need it - all with a single screwdriver. Not all microphones have equal level, nor do line level sources - fine tuning the input gain for the optimum amount is quick and easy. Extreme input levels can also be handled by using the 43dB input pad included with the PowerDock™ and MixerDock™ units.

3) individual hi and low cut EQ controls on each input channel (MX-8 MixerDock™ only)

This gives you the ability to individually tailor the frequency response of each input. Take some of the low end out of a "boomy" vocal, without affecting the music inputs...

4) changeable input connector plates (screw terminal, XLR, dual RCA)

Shipped with 3 position screw terminal connectors, the input connectors can be changed to accommodate the users' needs.

5) selectable phantom power

Each channel can select phantom power on or off - unlike a "global phantom power on/off" system there is no need to worry about sources that can't handle phantom power.

6) selectable mute status

Why be tied into always having channel 1 be your priority? Each channel can be set to one of the following mute states:

OFF	channel is always on
	channel will not affect or be affected by the mute circuit
PRIORITY	channel is always on
	channel will mute a *slave* channel or unmute an *inverted* channel
SLAVE	channel is normally on
	channel will be muted by a *priority* channel or manual mute closure
INVERTED	channel is normally muted
	channel will be unmuted by a *priority* channel or manual mute closure
INVERTED PRIORITY	channel is normally muted
	channel will unmute by a *priority* channel or manual mute closure

By configuring a channel to be both a priority and an inverted input, it will remain "off" until its own signal reaches the threshold point set by the *mute threshold* control. This essentially amounts to a "poor-man's noise gate".

note: this state should not be used on more than one channel, and will see its best use in cases of a noisy input with no means of manual triggering the channel on, ie. a phone line input...

7) adjustable mute level and threshold controls

At times a complete muting of background music is undesirable - with the *mute level* control, you determine the background music attenuation level. In noisy environments, false triggering of the automatic mute circuity can be controlled with the *mute threshold* control.

8) bridge connection for connecting multiple units

A transformer isolated bridge in/out allows multiple units to be connected together at the signal mix buss. Each mainframe unit still retains its master volume so multiple masters from a number of input sources is possible!

9) 10 segment LED output level meter

Calibrated in 3dB steps, the output level meter gives an accurate indication of system levels.

10) tape, aux, and pre-amp outputs

These multiple line level outputs allow much flexibility when distributing the signal - pre master level *tape output* for recording, post master level *aux out* for additional reinforcement, *pre-amp output* for feeding signal processing equipment or additional amplifiers...

11) transformer coupled 30, 60, or 120W output power (PowerDocks only)

Fully transformer coupled 4 ohm, 8 ohm, 25V and 70.7V outputs provide complete signal isolation from distributed speaker lines. Not only increases the inherent protection of the amplifiers, it also adds a further level of protection to the speaker lines.

12) transformer coupled +4dB main output (MX-8 MixerDock™ only)

The 150 ohm impedance of the MX-8 output is able to efficiently drive long balanced lines. Fully transformer isolated, grounding problems between equipment is eliminated.

13) 24VDC battery operation (MX-8 MixerDock™ only)

A 24VDC, 350mA supply can be used as an alternate power source for the MX-8. Mobile or field work is possible by utilizing this feature.

14) front panel expansion dock

Although it won't accept your VHS or BETA tapes, the front panel expansion dock will accept: Unified Electronics Accessory Cards

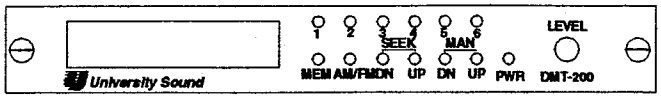
The Accessory Card docking connections are all done internally to the MixerDock™ and PowerDock™ units. This means no internal modifications are necessary when using the various plug in cards. This also means that input channels are not used when a card is plugged in! Adding a digital AM/FM tuner (the DMT-200) adds a tuner, it doesn't replace an input channel. By the same token, additional cards in development will only add to the flexibility of Unified Electronics.

The Extras:

Unified Electronics Accessory Cards

DMT-200 **AM/FM Digital Tuner**

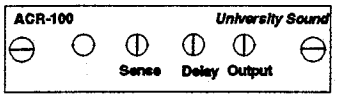
six AM and twelve FM station presets
seek and manual tuning
MOH (Music On Hold) tuner output
Non-glare, back-lit LCD display



The output of the DMT-200 is automatically sent to the mainframe mix buss without using an input channel. An additional tuner output is also available for use as an MOH source. The tuner interfaces with the mute buss of Unified mainframe units and will automatically mute when a priority page is made. A level control and power on/off switch are available on the tuner front panel.

ACR-100 **Audio Controlled Realy**

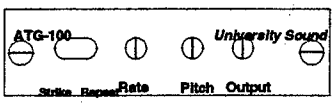
triggers from input channel
also can use external source
DPDT relay rated at 2A
Sensitivity, delay, output controls



The ACR-100 is ideal for audio-triggered switching applications. It can be configured to trigger from a MixerDock/PowerDock input channel, or an external source utilizing a 15k ohm matching transformer. The sensitivity can be adjusted to trigger from a signal as low as 15mV. The relay delay control provides up to 60 seconds of "relay latch" - this is useful when needing extended switch closure times if the trigger source is not constant.

ATG-100 **Analog Tone Gererator**

four different types of tones:
strike chime, repeat chime, steady tone, siren
triggers from contact closure
output level, pitch, and rate controls



Can be used as a break tone generator, warning bell, or pre-announcement tone. The ATG-100 output is sent to the mainframe mix buss, and utilizes a separate level control. The pitch control varies the tone from 850Hz to 1400Hz. An idea: utilizing the MDC-200, numerous ATG-100s can be used to build up a multiple tone signaling unit...

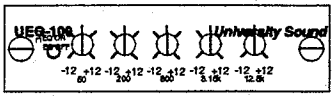
RVC-100 **Remote Volume Control**

four channels of control
control individual channel or master level
DC control via external potentiometer
up to 60dB of attenuation

The RVC-100 can be used to control up to 3 input channels and the master volume when used in a Unified PowerDock. In the MX-8, up to 4 input channels, or 3 input channels and the master volume can be controlled. The mainframe input channels are automatically connected to the RVC-100 when the accessory card is inserted. When used in the MDC-200, the RVC-100 acts as a stand-alone line level 4 channel mixer with remote control...

UEQ-100 **5 Band Equalizer**

EQ bypass switch
12dB of boost or cut
recessed center detent adjustment controls
direct buffered outputs corresponding to PowerDock/MixerDock inputs



The UEQ-100 is a very effective single channel 5 band equalizer based on a Klark Teknik design. It offers 5 bands of equalization with 12dB of boost and cut at center frequencies of 50Hz, 200Hz, 800Hz, 3.15kHz, and 12.5kHz. The UEQ-100 also provides buffered outputs corresponding to PowerDock/MixerDock inputs.

MDC-200 MasterDock Chassis

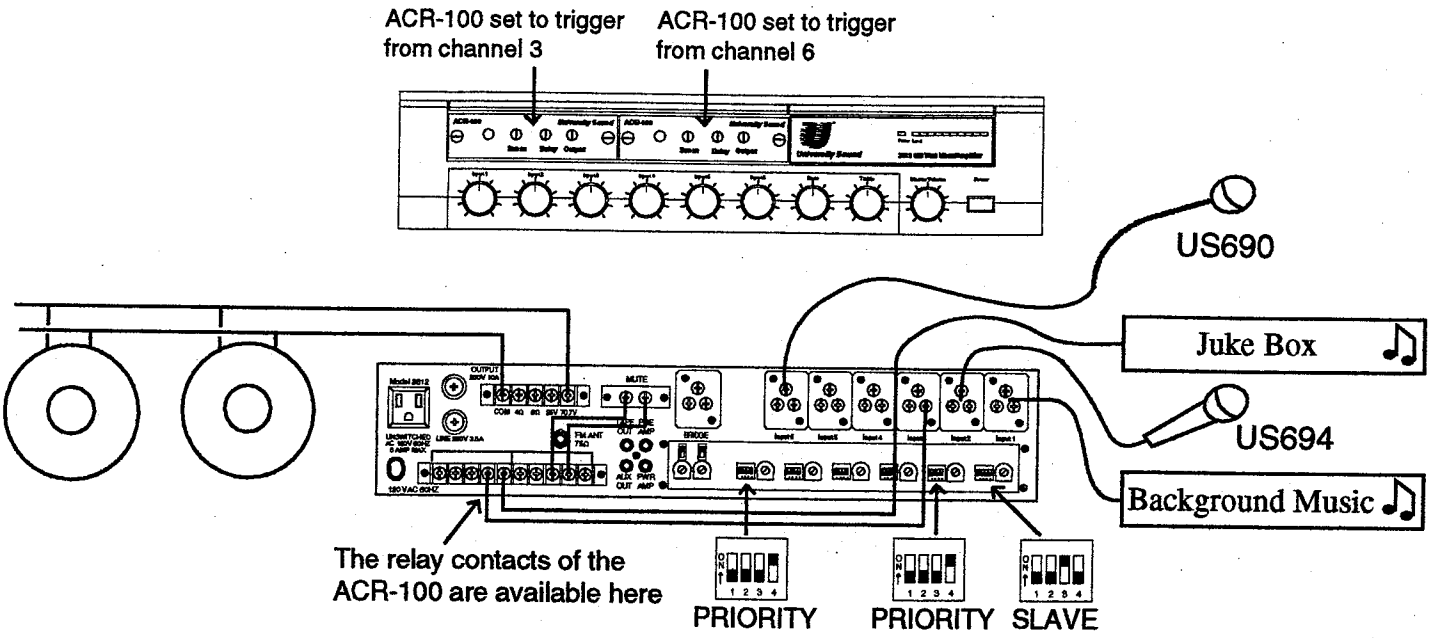
Accepts:
one 200 Series Accessory Card
two 100 Series Accessory Cards

Three mounting methods:
shelf top *rack mount (with MDC-200RM)* *wall mount (with MDC-200WM)*

The MDC-200 allows the use of Unified Accessory Cards as stand alone units. Systems needing more cards than can fit in the PowerDock/MixerDock or an exising system that needs updating both benefit from the MDC-200.

Applications:

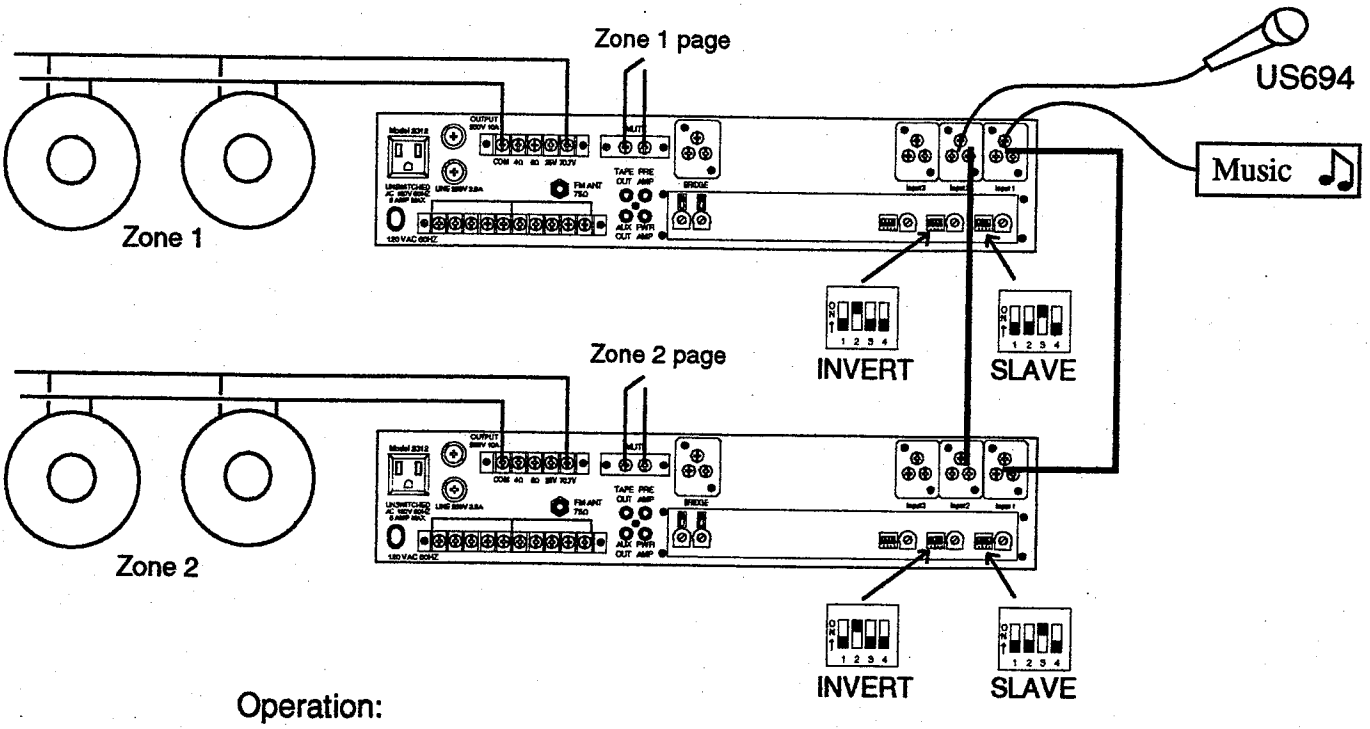
Priority foreground music with priority paging



Operation:

The Juke Box will trigger the ACR-100 which closes the mute connection turning off the background music. The "delay" control allows for an extended period of background music muting. The US694 vocal mic will automatically mute the background music. The second ACR-100 is triggered by The US690 will mute the background music and also trigger the second ACR-100 which will disconnect the Juke Box signal.

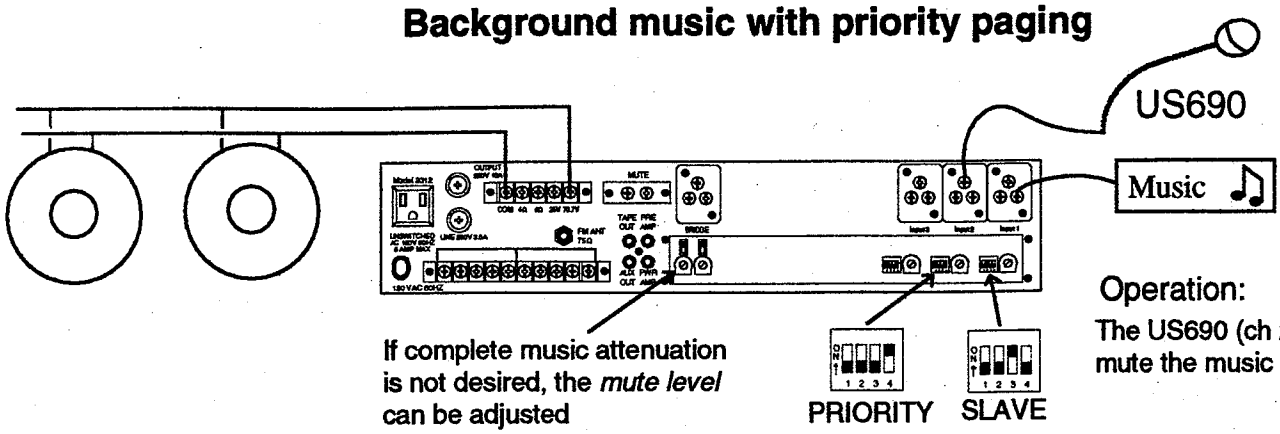
Zone paging with background music



Operation:

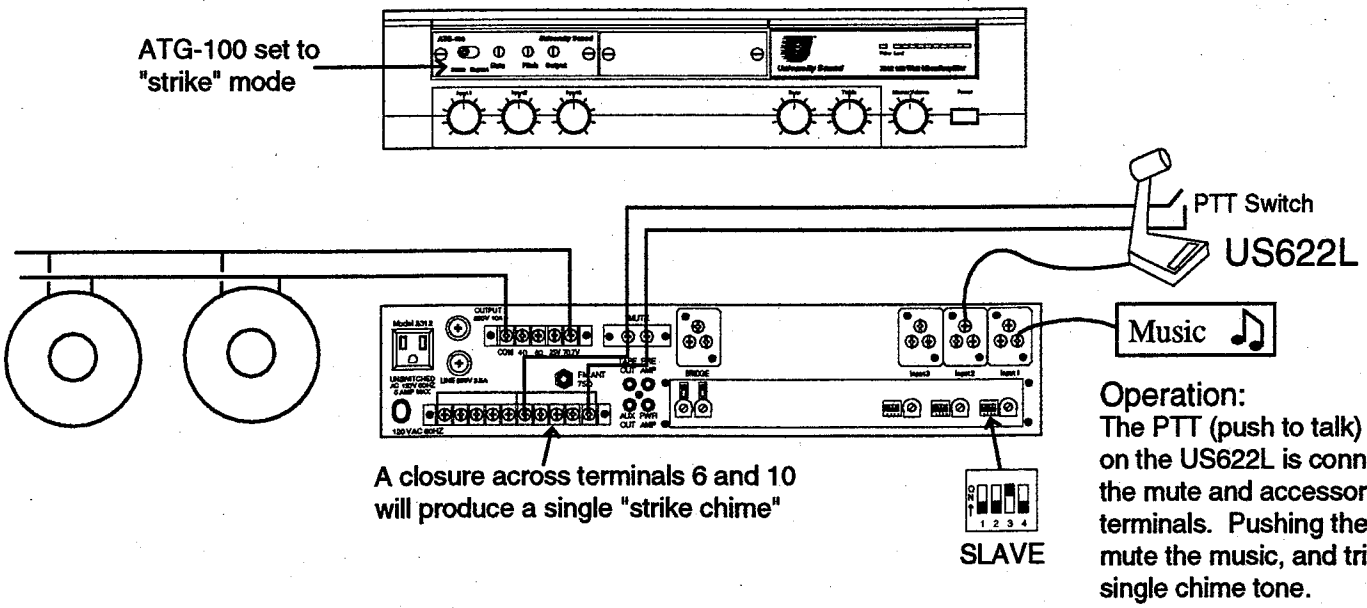
Both input sources are paralleled together. When the manual mute contacts are shorted, the US694 will turn on and the music will be muted in the selected zone.

Background music with priority paging



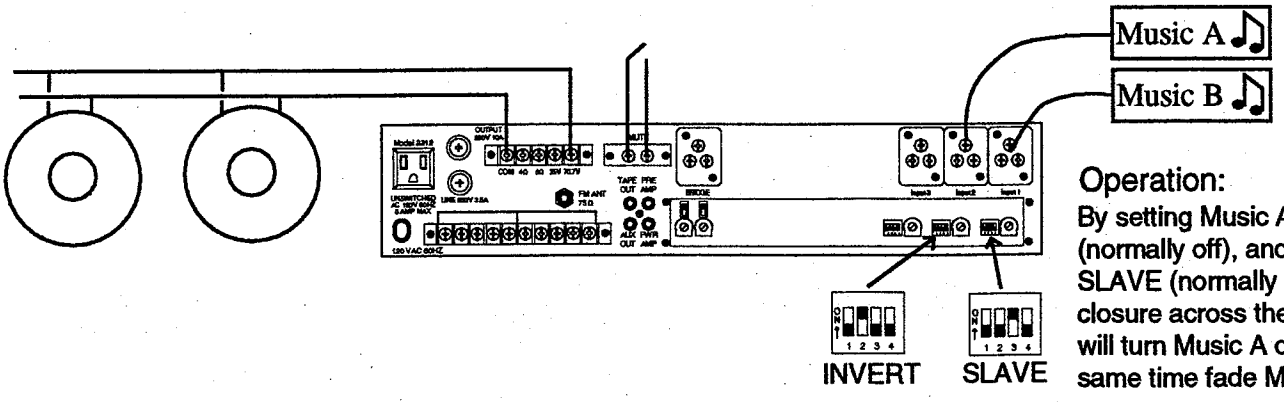
Operation:
The US690 (ch 2) will automatically mute the music source (ch 1)

Background music with priority paging and pre-announcement tone



Operation:
The PTT (push to talk) switch on the US622L is connected to the mute and accessory card terminals. Pushing the PTT will mute the music, and trigger a single chime tone.

Remote music selection



Operation:
By setting Music A to INVERT (normally off), and Music B to SLAVE (normally on), a contact closure across the mute terminals will turn Music A on while at the same time fade Music B off.

University Sound a MARK IV company
P.O. Box 24031
Oklahoma City, OK 73124-4031
Phone (405) 324-5311
Fax (405) 324-8981

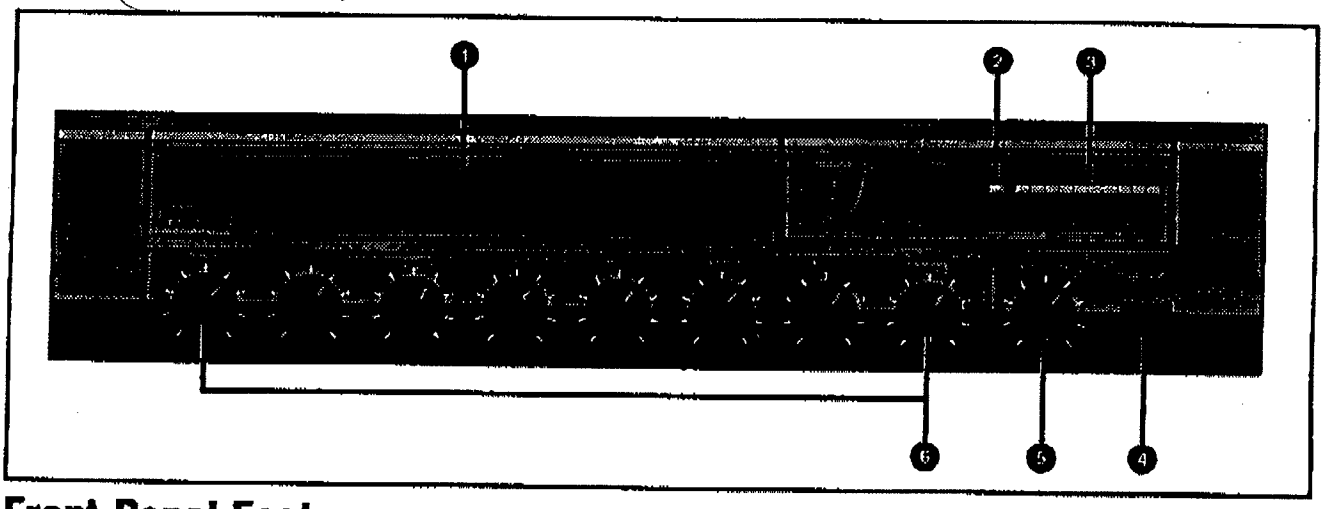
SPECIFICATIONS

	Unified Electronics	Peavey	TOA	Bogen
Power Outputs	4, 8 ohm 25, 70.7 volt all are transformer coupled	4, 8 ohm 25, 70.7 volt	4, 8 ohm 25, 70.7 volt	4, 8 ohm 25, 70.7 volt
Power Bandwidth	50 Hz - 20 kHz ±1 dB @ .5% THD transformer coupled	50 Hz - 20 kHz ±1 dB @ .5% THD transformer coupled	50 Hz - 20 kHz ±1 dB @ .5% THD transformer coupled	fat over entire frequency spectrum
Frequency Response	20 Hz - 20 kHz ±1 dB transformer coupled	20 Hz - 20 kHz ±3 dB	20 Hz - 15 kHz ±1 dB transformer coupled	20 Hz - 20 kHz +0/-1 dB @ 5% distortion
Signal to Noise Ratio	>95 dB volume at min	(</>) 90? dB volume at min	(</>) 95? dB volume at min	-70 dB or better

FEATURES

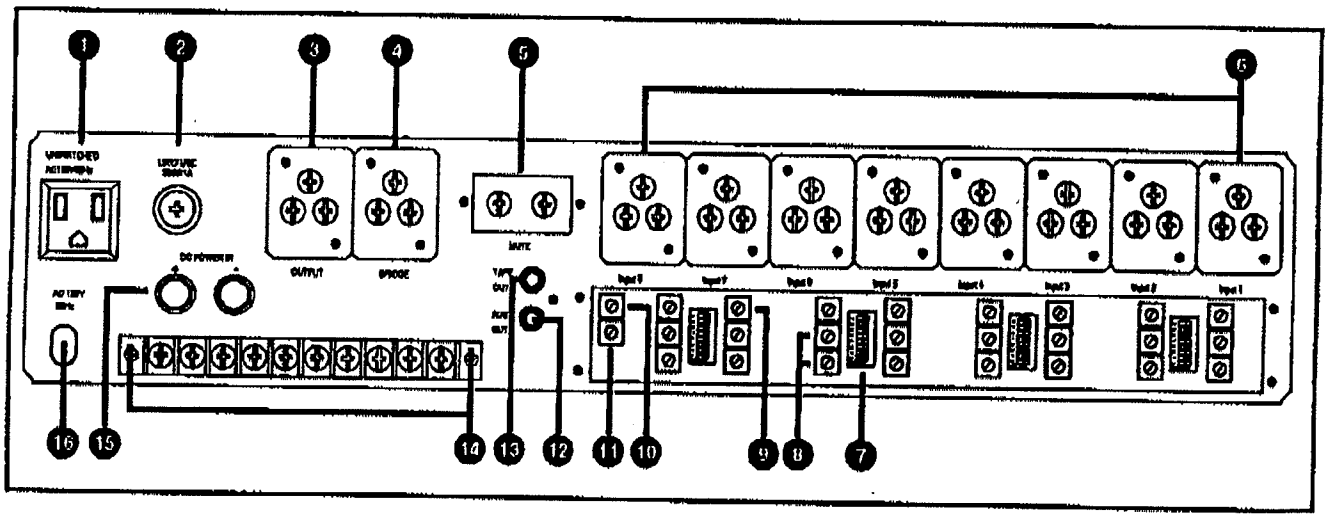
INPUTS:	**Unified Electronics**	**Peavey**	**TOA**	**Bogen**
Quantity	3, 6 or 8	7	8	7
Type	transformer balanced	which module	which module	which module
Level	mic-line	which module	which module	which module
OUTPUTS:				
Bridge In/Out	YES	YES	YES	?
Auxillary	YES	YES	YES	?
Pre-Amp	YES	YES	YES	YES
Tape	YES	NO	NO	NO
MUTE LEVELS:				
Slave	YES	which module	which module	3 levels on board
Priority	YES	which module	which module	3 levels on board
Inverted	YES	n/a	which module	n/a
Inverted Priority	YES	n/a	n/a	n/a
PLUG IN ACCES. CARDS:				
Audio Cntrl. Relay	ACR-100*	n/a	n/a	n/a
Remote Volume Control	RVC-100* provides 4 channels of level control	on board (master only)	on board (master only)	n/a
Tone Generator	ATG-100*	which module	which module	which module
Digital Tuner	DMT-100*	n/a	n/a	n/a
Equalizer	EQ-100*	n/a	n/a	n/a
Future	FUTURE ANYTHING	?	?	?
	*None of these occupy an input channel, they are in addition to them			
PRICES (OLD)	MX-8, 8 channel mixer, $369.00	MPA-700 w/6 modules, $347.00	M-900 mkII w/ 8 modules, $522.52	n/a
	2303, 3channel, 30 W, $290.00	MA-635T w/ 3 modules $301.45	A-903 mkII w/3 modules, $359.39	DMA-40, 40 W w/ 3 modules, $325.00
	2306, 3 channel, 60 W, $390.00	MA-675T w/ 3 modules, $358.00	A-906 mkII w/ 3 modules, $459.85	DMA-80, 80 W w/ 3 modules, $425.00
	2312, 3 channel, 120 W, $450.00	MA-6150T w/ 3 modules, $398.00	A-912 mkII w/ 3 modules, $530.30	DMA-160, 160 W w/ 3 mods,$487.00
	2603, 6 channel, 30 W, $370.00	MA635T w/ 6 modules, $389.95	A-903 mkII w/ 6 modules, $467.00	DMA-40, 40 W w/ 6 modules, $415.00
	2606, 6 channel, 60 W, $477.00	MA-675T w/ 6 modules, $446.50	A-906 mkII w/ 6 modules, $573.46	DMA-80, 80 W w/ 6 modules, $515.00
	2612, 6 channel, 120 W, $570.00	MA-6150T w/ 6 modules, $486.50	A-912 mkII w/ 6 modules, $643.91	DMA-160, 160 W w/ 6 mods,$577.00

(update)



Front-Panel Features:

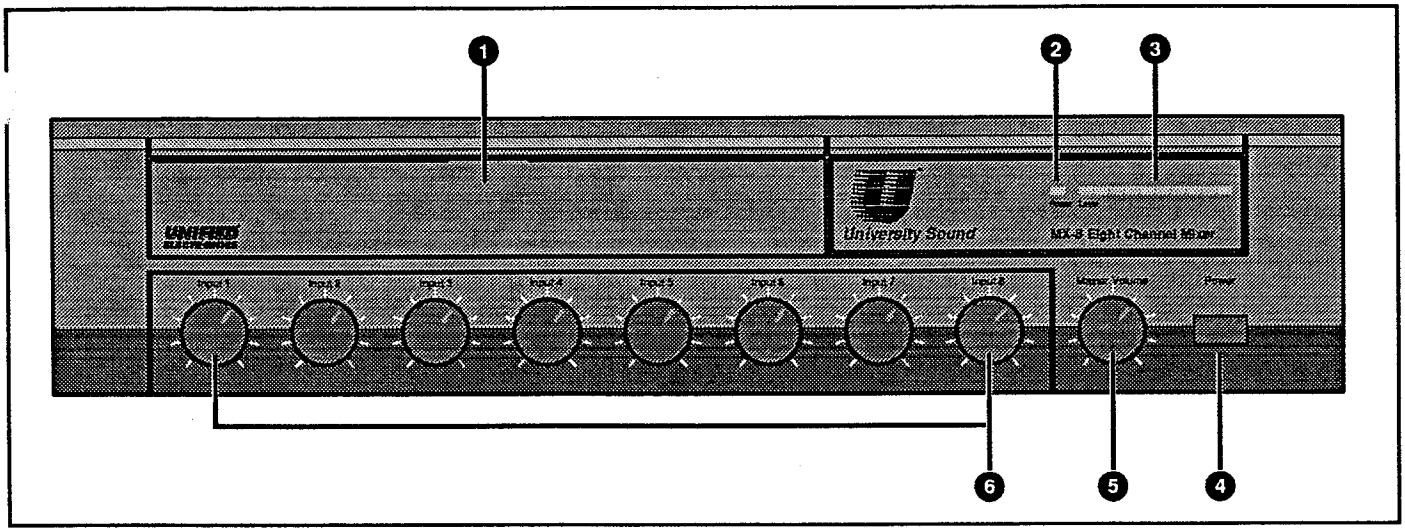
1. Unified Line Accessory Slot Cover
2. Power On LED Indicator
3. Signal Level LED Bar-Graph
4. Power On/Off switch
5. Master Volume
6. Input Level Controls (Inputs 1 - 8)



Back-Panel Features:

1. Accessory AC power outlet (unswitched)
2. Circuit protection fuse (250V/1A)
3. Transformer balanced output connector (screw terminals)
4. Transformer balanced bridging input/output connector (screw terminals)
5. Manual mute screw terminals
6. Input channel connectors (inputs 1 - 8)
7. Mute state and phantom power selection switches
8. Input equalization controls (high and low cut)
9. Input gain control (inputs 1-8)
10. Mute level control
11. Mute threshold control
12. Aux output connector (RCA phono jack)
13. Tape output connector (RCA phono jack)
14. Unified Line Module input/output screw terminals
15. DC power input connector (24 VDC, banana-plug terminals)
16. AC power cord input

OLD



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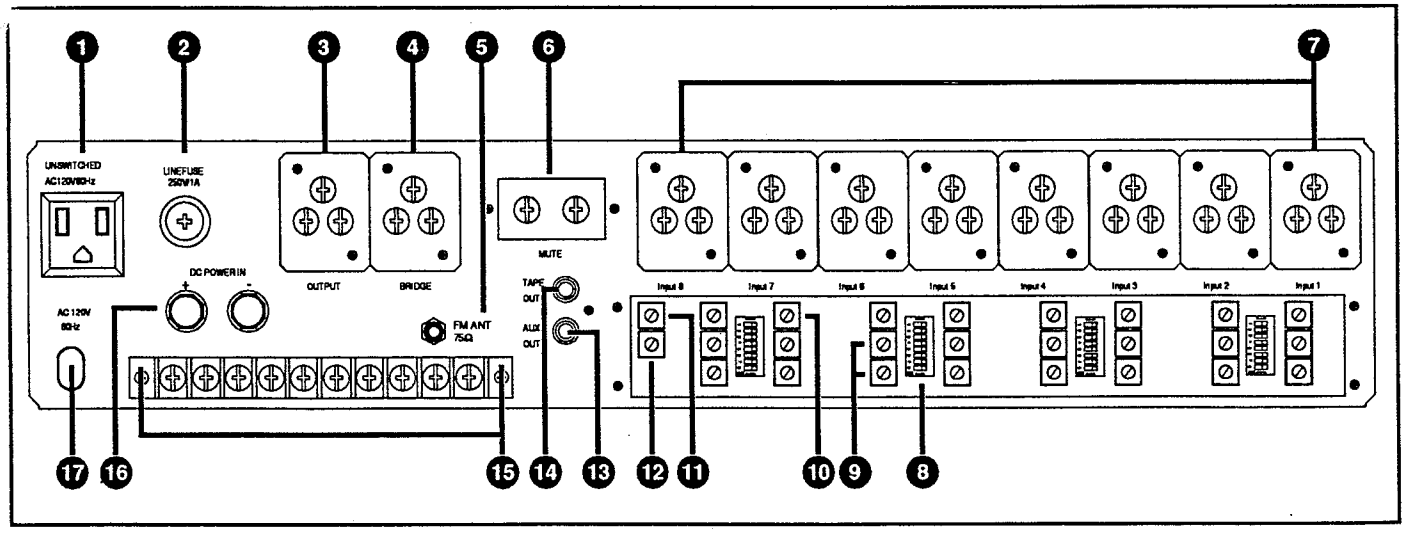


Back-Panel Features:

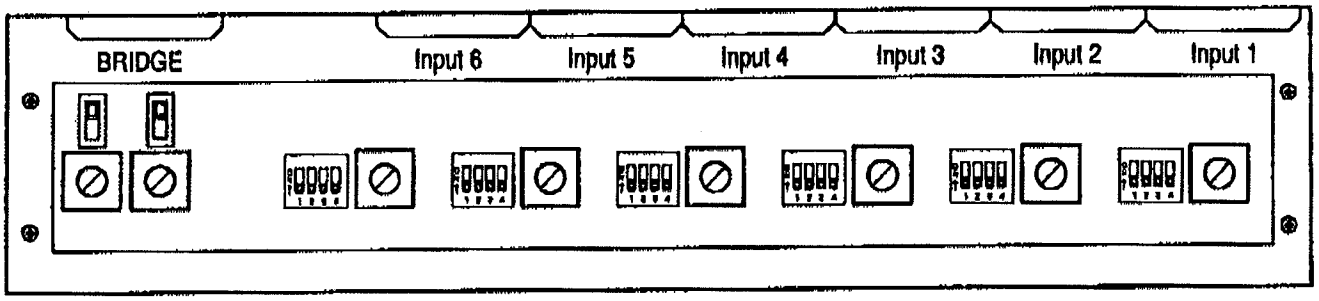
1. Accessory AC power outlet (unswitched)
2. Circuit protection fuse (250V/1A)
3. Transformer balanced output connector (screw terminals)
4. Transformer balanced bridging input/output connector (screw terminals)
5. 75 Ohm FM Antenna Input (for use with DMT-200 accessory tuner)
6. Manual mute screw terminals
7. Input channel connectors (inputs 1 - 8)
8. Mute state and phantom power selection switches
9. Input equalization controls (high and low cut)
10. Input gain control (inputs 1-8)
11. Mute level control
12. Mute threshold control
13. Aux output connector (RCA phono jack)
14. Tape output connector (RCA phono jack)
15. Unified Line Module input/output screw terminals
16. DC power input connector (24 VDC, banana-plug terminals)

219-484-6179

2000

DIP Switch Controls

Phantom power and mute status can be individually set for each channel by means of the rear panel DIP switches. Each 4-position DIP switch controls the phantom power and muting status for the channel next to the DIP switch. Switch assignments are shown in the figure below. A reproduction of this figure is located on the inside of the plate covering the DIPs and gain controls. This template can be used to record the settings used for a particular installation for later reference. Once the settings are completed and marked on the template, replace the cover and screws to prevent tampering.



Phantom Power

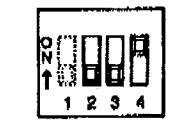
Each input channel is capable of providing a 24 VDC phantom power supply to power electret-type microphones. Switch position 1 (the left-most switch) on each DIP package is used to enable or disable the phantom power voltage. Each input on the 2000 Series has its own phantom power status. This design allows the use of electret-type microphones and non-phantom powered devices on the same mixer. To use 24 VDC phantom power on an input, set its corresponding switch to the "ON" position using a mini flat-head screwdriver. Be careful not to apply phantom power to a microphone not designed to use this power source; damage to the microphone can result.

Programmable Muting

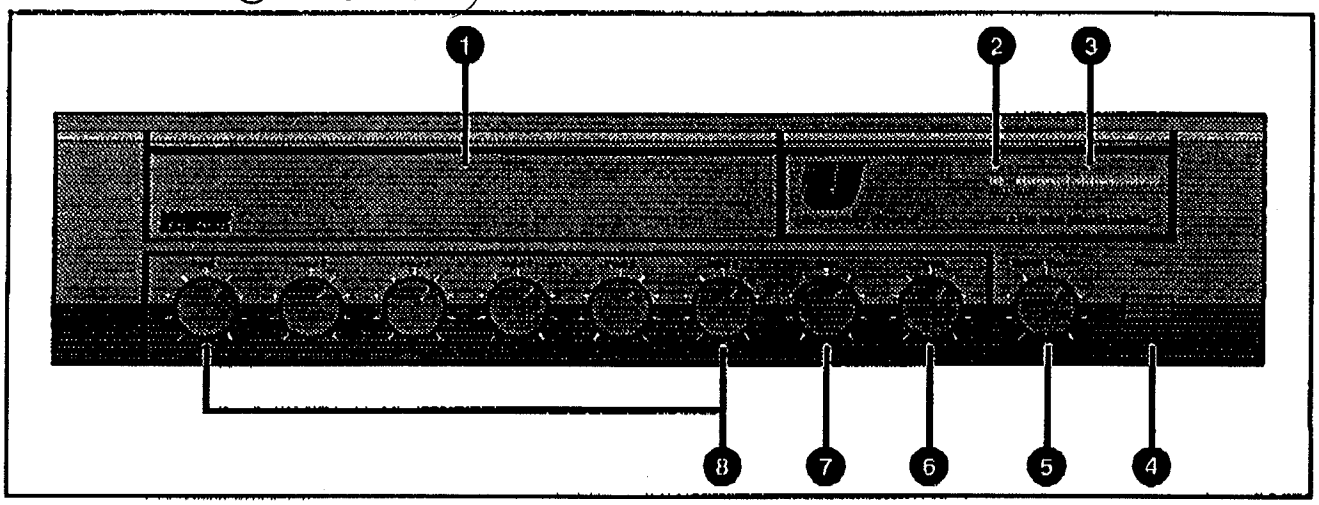
The 2000 Series has very versatile muting capabilities; five different muting configurations are available for each input. The installer may select manual or voice-activated muting and set both the variable mute threshold and degree of attenuation. See the figure below for the DIP switch settings that correspond to each of the muting states. If the mute state of an input is set to "Off," that input will not be affected by the muting circuitry at all; it will not be muted by any other channel nor will it cause any other channel to be muted. The "Priority" and "Slave" states are the conventional muting arrangements found on most other paging mixer-amplifiers. An input set to Priority will mute all channels set to Slave (and unmute channels set to "Inverted"), when a signal is detected on that input. Slave channels will also be muted when the manual muting circuit is activated, while the Priority channels will be unaffected by a manual mute. The "Inverted" mute state will leave a channel normally muted, and unmute it when a signal is detected on a Priority channel or the manual mute is activated. This state is useful for attaching a single-strike tone generator to generate an alert chime before a page is made, since the channel needs to be open only while a page is being made.

(continued on page 8) ⟶

DIP Switch Settings for Input Muting States

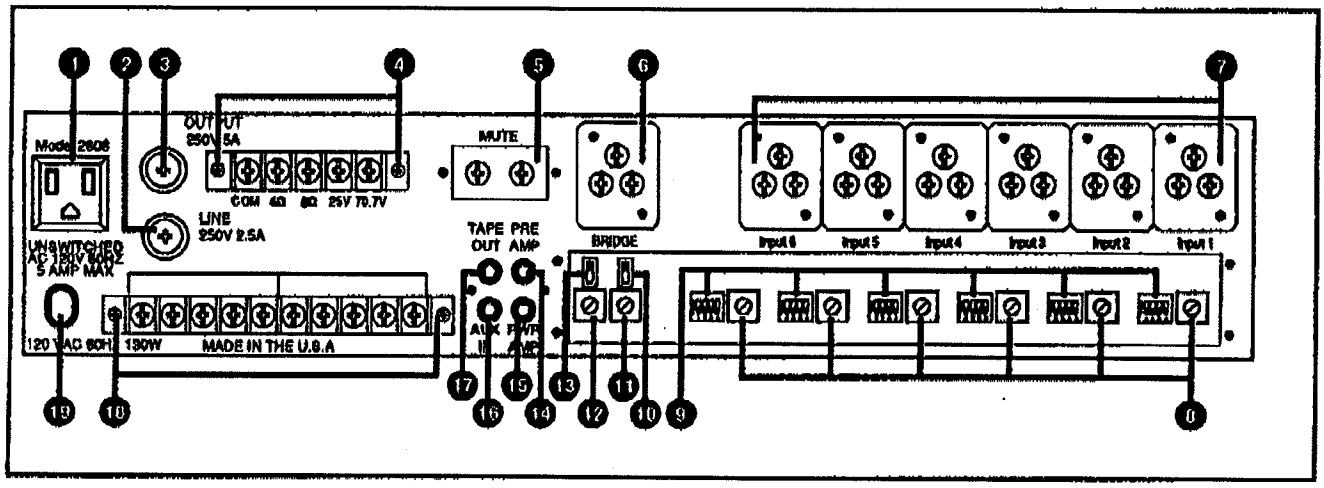
Off	Priority	Slave	Inverted	Inverted Priority
				
Channel will neither mute other channels nor be muted by other channels	Channel will mute Slave channel, or unmute Inverted channels	Channel is normally unmuted, but is muted by a Priority signal or a manual mute	Channel is normally muted, but is unmuted by a Priority signal or a manual mute	Channel will remain muted until a Priority signal is over the muting threshold point.

2000 Series



Front-Panel Features:

1. Unified Line Accessory Slot Cover
2. Power On LED Indicator
3. Signal Level LED Bar-Graph
4. Power On/Off Switch
5. Master Volume
6. Treble Tone Control
7. Bass Tone Control
8. Input Level Controls (inputs 1 - 3 on 2300 models)
   (inputs 1 - 6 on 2600 models)



Back-Panel Features:

1. Accessory AC Power Outlet (unswitched)
2. Line Fuse
3. Output Fuse
4. Power Amplifier Output Screw Terminals
5. Manual Mute Screw Terminals
6. Transformer Balanced Bridging Input/output Connector (screw terminals)
7. Input Connectors (inputs 1 - 3 on 2300 models)
   (inputs 1 - 6 on 2600 models)
8. Input Gain Control (inputs 1-3 or 1-6)
9. Mute State and Phantom Power Selection Switches
10. Low-Cut Switch
11. Mute Threshold Control
12. Mute Level Control
13. Preamp Out/Power Amp In Link Switch
14. Pre-Amp Output (RCA phono jack)
15. Power-Amp Input (RCA phono jack)
16. Aux Output Connector (RCA phono jack)
17. Tape Output Connector (RCA phono jack)
18. Unified Line Accessory Screw Terminals
19. AC Power Cord Input

CONTACT™
University® Sound
Summer, 1993
Volume 7, Nº 1

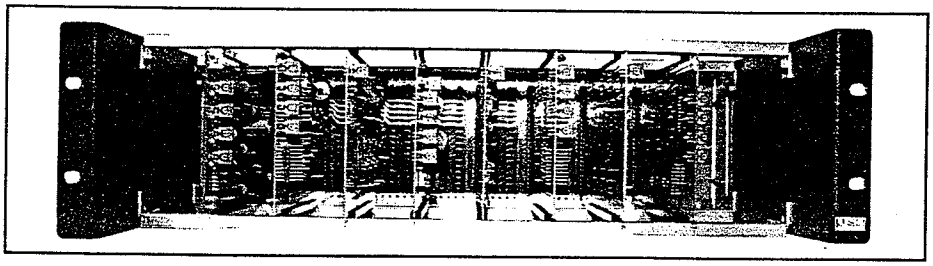
How Can You Build A Custom Sound System

without losing your shirt or bidding yourself right out of a job?

With a new product of ours, the DME-3000. DME stands for "Diversified Modular Electronics." Part of our new USI Audio line (see *MacCallum's Column* on page 2), the DME-3000 system was developed in response to contractor requests for a simple, economical and powerfully flexible audio distribution tool. The backbone of the system is the 3000-MF Mainframe, which holds up to eight DME cards in a rugged, aluminum 5.25″ x 19″ rack-mount chassis. No soldering or special tools are needed for installation or configuration of the cards and mainframe. All on-card signal assignments and muting settings are made via push-on tandem connectors ("jumpers") and all mainframe, power and signal I/O connections are via captive screw terminal blocks. The power supply modules are external and UL approved.

BussPlate™ Technology

A key feature in the DME-3000 is a specially designed back-plane circuit board for the mainframe – we call it a BussPlate. The BussPlate comes sized with card-edge connectors for 1, 4, or 8 plug-in circuit cards so you can configure the frame to handle as many cards as needed without paying more than necessary. The BussPlate is fitted with special terminal blocks behind each circuit card slot so that all audio and logic signals are available at captive screw terminals. This enables you to do cross-point bussing between cards and across card frames. It really simplifies the task when you have unusual or complex signal routing requirements.



The New 3000-MF Mainframe – Front View

Alarm Card

The 3044-AL four-channel system status monitor keeps track of voltage levels (5 to 30 VDC), pink noise (in masking systems), or a VHF tone. It can be calibrated on a channel-by-channel basis and will trigger an alarm when there is a change greater than ±10% (DC level) or ±3dB (noise/tone level). Each channel has 3 LEDs to indicate nominal or alarm state; there is an audible alarm (mutable) and provisions for remote alarm indication.

Typically, redundant power supplies are connected to the card in parallel (via isolating diodes). Should one supply fail, the other will continue to power the card so the alarm function is protected – and the card itself will sound an alarm should one supply go down.

This card can also be used, with an infra-red interrupt sensor, as the basis for a security alarm system.

Summing Amps

The 3081-SA, 3075-SA, and 3142-SA/2C respectively accept 8, 7 or 14 line level inputs. The 3081-SA includes four mute groups (triggered by contact closures) with normally ON or normally MUTED modes, and mixes 8 in to 1 out (balanced). The 3075-SA mixes 7 inputs, four of which can be muted and 3 of which cannot; it has internal or external level controls. The 3142-SA/2C accommodates stereo applications, with two separate channels of summing for the 14 inputs (i.e., 7:1 x 2). Gain can be unity or +10 dB (for bringing consumer levels up to pro levels).

Distribution Amp

The 3016 card distributes one balanced input to 6 balanced outputs. It has overall gain trim, an LED peak indicator, and can be used with or without the card cage.

The DME-3000 is great for signal routing, distribution, status monitoring and gain adjustment in complex systems.

Also in this issue:

MacCallum's Column

by Doug MacCallum, President

Positive changes are always exciting. More good things are happening now at University than at any other time in our recent past. For openers, we are expanding and offering a new brand of products for contractor engineered sound systems, *USI Audio*. Products bearing the USI Audio name will offer complex capabilities at reasonable prices. The experienced contractor, with USI Audio products, can add real value and engineering to his systems.

USI Audio's first products are the DME-3000 line — a flexible, card-cage electronic system that lets the contractor custom-configure and engineer complex systems with a minimum of labor. (See cover story.) DME stands for "Diversified Modular Electronics."

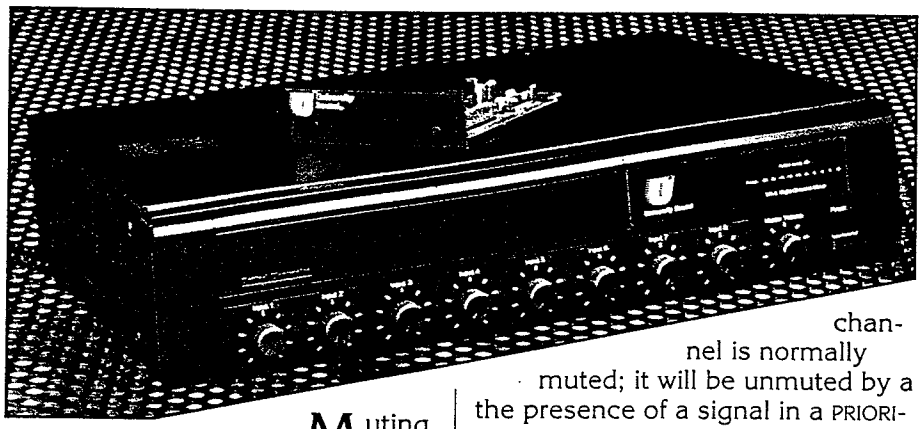
Here are some examples of applications you can set up with just one 5.25" high cage and 8 cards:

1. Split 1 input to 42 outputs with no loss in gain or S/N, and monitor the power and signal to all of the cards with an alarm that triggers if the input signal changes by more than ±3 dB, or
2. Alarm-monitor 32 channels of any combination of power and audio, or,
3. Assign 4 – 32 channels of input to 4 – 32 mute groups – with any mix of regular or inverted mute.

The list goes on and on, but you get the picture. You have the opportunity for specific customization of functions.

DME is but one of the many innovative and useful offerings coming your way from University Sound in 1993. The new PA415T constant directivity paging horn is a lower powered version of the popular PA430T. Also new are our 1800 Series Digital Receivers, the US692 mic, and the 1710 BGM amplifier. These products offer solid reasons for you to take notice of University Sound and USI Audio products. With an ever increasing core of products for traditional commercial sound to more sophisticated engi-neered sound products, University is more committed than ever to offering you high quality and value.

MX-8's Programmable Muting is Powerful Feature



Muting is nothing new in the mixing world. Some large mixing consoles have been designed with presets that enable whole groups of channels to be muted at the push of a button for turning "scenes" on and off. And a number of small, rack-mountable mixers have offered muting in one form or another for years. What distinguishes University's Unified Electronics MX-8 is the versatility of its muting functions.

The MX-8 MixerDock™ is an 8-channel input, mono output mixer to which you can add an AM-FM digital tuner, an audio-activated switching relay, or a multi-function tone generator accessory card. These accessory cards plug into a front-panel expansion slot.

Five Mute Settings for Each Channel

Each input channel can be programmed to any of five muting modes via easy-to-set DIP switches (DIP = Dual Inline Pin).

When the channel's muting function is OFF, the channel will neither cause other channels to be muted, nor will it be muted by activity in other channels. A channel may be disabled by turning all DIPs ON.

When the channel's muting function is set to PRIORITY, any signal present at the channel's input will cause those channels set to SLAVE mode to become muted, and it will cause those channels set to INVERTED mode to become unmuted.

When the channel's muting function is set to INVERTED, then the channel is normally muted; it will be unmuted by a the presence of a signal in a PRIORITY-set input channel or when a manual mute is activated.

When the channel's muting function is set to SLAVE, the channel is normally unmuted. It will become muted when there is signal present at any channel set to PRIORITY or when a manual mute is activated.

When the channel's muting function is set to INVERTED PRIORITY, the channel will remain muted until a priority signal is present and is at a level above the muting threshold.

Manual muting is performed by completing the circuit across a pair of rear-terminal MUTE contacts on the MX-8. The actual contact closure can be accomplished by a relay, microphone push-to-talk switch, etc.

Many Different Applications, including:

...Restaurant/Bar

In a typical system, the MX-8 might have musical program (line)

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inputs from CDs, tapes and/or a live keyboard player or guitarist. There might be microphone input sources from the performer (a "mood" singer, for example) and from one or two announce microphones (such as that at the bar, maitre d' station, etc.). Normally the music and any vocal mics will be directed to the loudspeakers. However, when someone wishes to make an announcement or host a live presentation, it is useful to mute the music – without having to attend to the mixing controls.

The MX-8 allows for automatic muting by setting the singer's mic input to SLAVE mode and the announce microphone input channel to PRIORITY mode. (You would not want to use this setup for a featured performer since you would not want pages to interfere.)

You can set the degree of muting invoked by the function to be appropriate to your application – from 15 dB of attenuation (about a fifth as loud) to 40 dB of attenuation (almost inaudible). In a nightclub or bar situation, where the person using the mic might wish to make a brief announcement and be heard clearly above the crowd and the music, you might set the muting level to 25 dB or more. In a restaurant, where the music is reasonably quiet to begin with and the crowd less noisy, you might set the muting level to the minimum available 15 dB figure so that the change in background music level and the impact of a sudden voice override is less objectionable.

...Office Music & Paging

A small suite of offices could employ the MX-8 with its FM tuner module as a source of background music. The music channel would be set to SLAVE mode, and the paging mic(s) to PRIORITY mode so that a page automatically mutes the music. At the same time, an automatic single-strike tone generator can be set to chime at the beginning of a page to focus attention on that page. The chime's input channel can be set to INVERTED mode so that it is normally muted, thus reducing line noise when no chime is present. As soon as the announce (PRIORITY) channel is activated, the chime (INVERTED) channel unmutes so that the chime can be heard.

In essence, this gives the chime priority over music but does not let it do anything unless a true PRIORITY input is activated.

Adjustable Muting Threshold

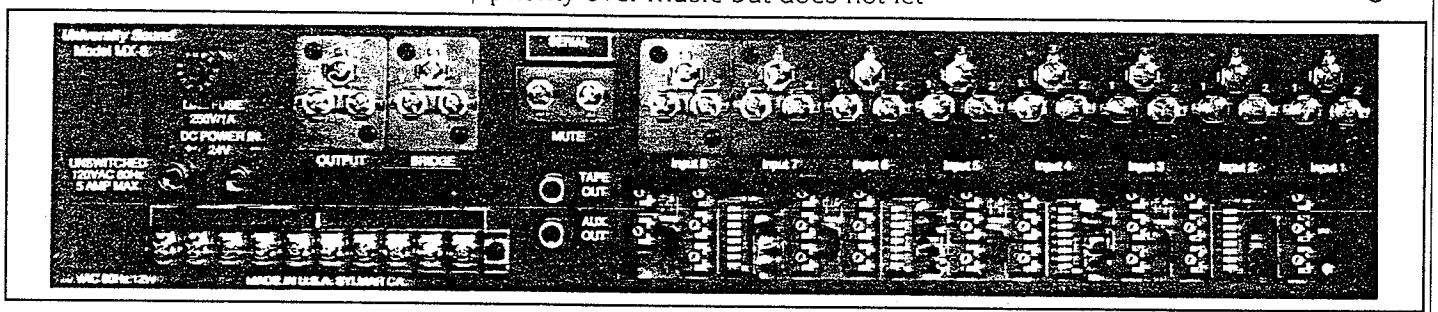
Since the MX-8 senses the presence of signal at a PRIORITY input when determining whether to mute any SLAVE or INVERTED PRIORITY channels, the question arises, "How much signal is enough to trigger the muting function?" If the muting is too sensitive, any slight background noise near the PRIORITY mic will punch holes in the background program. If the sensitivity is too low, the person making an announcement may have to speak at an uncomfortably high level, hold the mic too close, or risk having initial syllables chopped off. For this reason, the MX-8 has a rear panel THRESHOLD control.

The threshold adjustment is particularly important when using the INVERTED PRIORITY MUTE function on any input channels, as explained below.

Inverted Priority Muting For Automatic Groups of Active Channels

Inputs set to INVERTED PRIORITY MUTE mode will turn on when any channel set to PRIORITY mode turns on. Thus, it is a bit like a noise gate gated by another input source, but one with a "group on" function that activates all inverted priority channels at the same time. Consider what happens when you have one or more noisy input sources — perhaps a remote feed via phone line or a poor recording. You don't want a constant source of noise to become part of the mix when there is no program present, but you do want the source when there is signal present on the PRIORITY input(s). By setting the noisy input(s) to INVERTED PRIORITY MUTE mode, they will not turn on until a signal is present above the threshold level at a PRIORITY input (i.e., one where a known input that is not noisy is present). The noisy source(s) will thus be masked by the quieter (or "cleaner") program source(s).

There are many other possibilities for programming the MX-8 to do different mixing jobs. The important point is that the flexibility is there to allow the user to set it up appropriately – and to easily change the setup as the requirements change.



Rear Panel of The Unified Electronics MX-8 with Cover Panel Removed to Reveal Channel-Status DIP Switches

Contractor Corner

Instantaneous Changeover A Standby Amplifier

This column is available for exchange of ideas between readers. If you submit a tip to us (address on page 2) and if we publish your tip, you will receive the University mic of your choice absolutely Free!

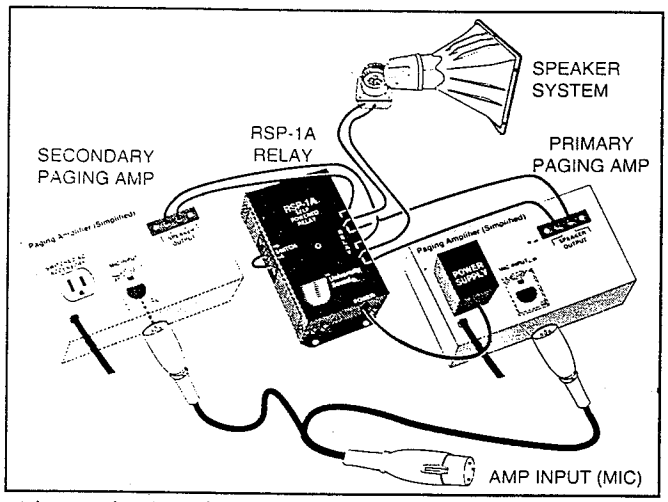
Local regulations, and/or common sense, often dictate the necessity for a standby amplifier. Consider the need in places of public assembly such as concert halls and auditoriums, motion picture theatres, and so forth. Regardless of how reliable the primary amplifier may be, a backup is sometimes either a good idea or a legal necessity. And we must assume you won't have time to rewire the speaker connections from one amp to the other when trouble arises. [No, you cannot connect the outputs of two amplifiers to the same speakers even though one amp is turned off.]

The University Sound RSP-1A Relay is an excellent product to use in this application, where it can be configured for automatic switchover of the speaker leads.

The RSP-1A is a self-powered selective paging relay that has DPDT precious metal contacts (so it won't corrode as it sits there unused for long periods of time). An arc suppression diode reduces kickback voltage in the relay coil, preventing startup pops or clicks.

If you split the "emergency announce" mic input to drive both the primary and standby amplifiers (using a splitter transformer or even a simple Y-cord), then you need only switch the speaker output. By connecting the RSP-1A as illustrated in the accompanying diagram, it will automatically be activated when you turn on the power to the standby amp, and it will switch the speaker connections immediately.

CAUTION: In case you are tempted to get creative and also switch the microphone from one amp to the other, be careful. If you do it in the same relay that you use to switch the speaker leads, capacitive coupling is likely to cause the amp to go into oscillation. It is safer to either split the mic to feed both amps or to use a separate relay for the input if you do want to switch it.



The primary paging amp is connected to the RSP-1A's normally-closed contacts, the standby amp to the normally -open contacts, and the speakers to the wipers. The RSP-1A is plugged into the backup amp's switched AC outlet. The RSP-1A "Switch" contacts are jumpered shut.

Meet Ken Koceski...

...Engineering Manager

University Sound has, more than anything, evolved into an engineering, manufacturing and sales company. We design products, make them, and sell them. Some of the product manufacturing is done by our sister companies in the Mark IV Audio group. Ken Koceski is University's Engineering Manager. He serves a key function in our company as a Sylmar-based engineer, and as a liason to our sister companies.

Ken has been with University for five years. In fact, he started with Cetec-Raymer Electronics, whose product line was assimilated by University sound when the companies merged in 1988.

Ken was involved with the redesign of the ZP3 to become a ZP4, the improved TGSP-4, RSP-1A, 1700 Series, and was the driving force behind Unified Electronics. He remains responsible for project management and coordination of development with University's sister divisions.

Ken has also gone on the road to lead product seminars, and may again do it – so you may yet have an opportunity to meet him in person. However, you can always meet him on the phone; if you have any product ideas or suggestions, just give him a call.

Ken has a BSEE degree from the University of Michigan. Ken also has a strong musical audio background and plays guitar and keyboards. Perhaps this broad background in electrical engineering, music and product development is why Ken can successfully wear many hats at University.

Dealer Cost $ 390.90

University Sound
A Mark IV Company

2306/2312
Mixer/Amplifiers

UNIFIED ELECTRONICS

Product Data

- **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 4Ω, 8Ω, 25V, and 70.7V speaker systems**
- **Five post-mix line-level connections: Pre-Amp out, Power-Amp in, Tape, Aux,and Bridge In/Out**
- **Unified Line expandability**
- **Phantom power on/off individually selectable for each input**
- **Indivual voice-activated muting selectable for each input**
- **Link switch allows dedicated use of signal processing equipment**

Specifications:

Power Output	60 Watts RMS (2306) 120 Watts RMS (2312)
Power Outputs	4Ω, 8Ω, 25V, 70.7V
Power Bandwidth	50 Hz - 20,000 Hz ± 1 dB @ 0.5% THD
Frequency Response	20 Hz -20,000 Hz, ± 1 dB
Signal to Noise Ratio	> 75 dB master vol max > 90 dB master vol min
Inputs	3 transformer balanced Mic to line levels on each
Equalization	Treble, Bass, & Low-Cut
Treble	± 10 dB @ 10 kHz
Bass	± 10 dB @ 100 Hz
Low-Cut	- 7 dB @ 60 Hz
Line-level Outputs	5.6 KΩ Bridge Tape output Aux output Pre-Amp out/Pwr-Amp in
Circuit Protection	AC line and output fuses
Power Supply	120 VAC, 60 Hz
Dimensions	
Height	4.0" (10.1 cm) 2 rack-units in 19" rack
Width	16.5" (41.9 cm)
Depth	12.25" (31.1 cm)
Weight	18 lbs (8.1 kg) (2306) 22 lbs (9.9 kg) (2312)

Description

The Model 2306 and 2312 PowerDocks™ 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 two 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 isolated 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. 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.

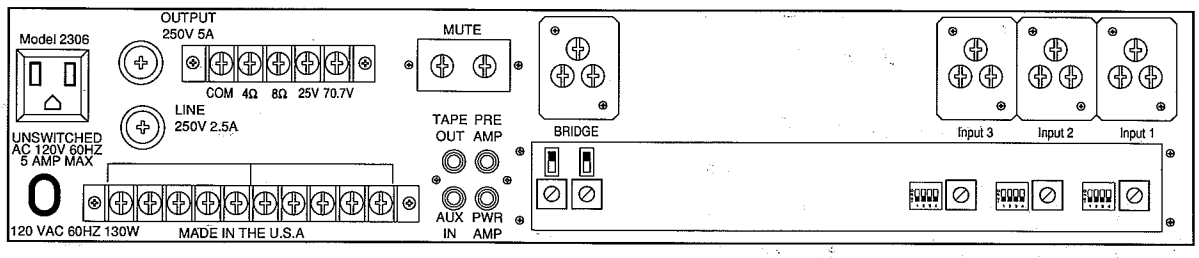
Each input of the 2306/2312 is capable of providing 24 VDC phantom power for use with electret-type microphones. Unlike other mixers that link all inputs to the same phantom power switch, each input's phantom power status on the 2306/2312 can be set separately. With this arrangement, electret mics can 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 pre-amplifier signal. The PRE-AMP output and POWER-AMP input pair provide a way to parallel the 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 a AUX output, both of which carry a 47KΩ line impedance 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.

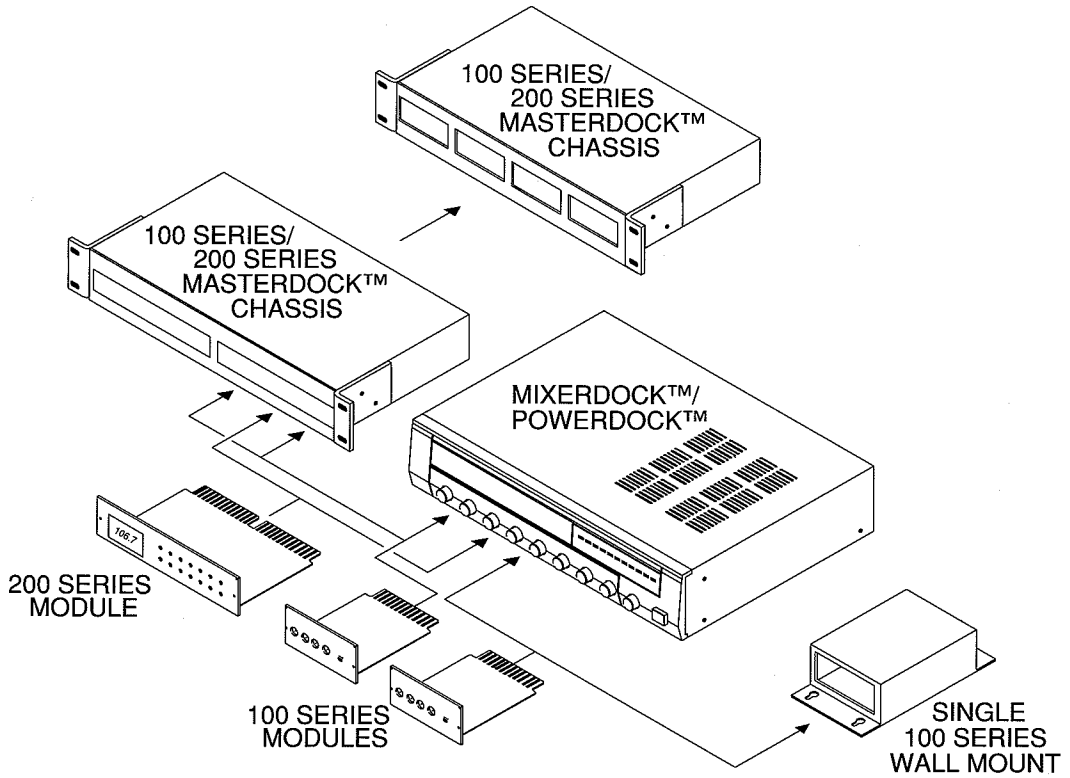
The 2306/2312 is powered by conventional 120 VAC 60 Hz lines. Circuit protection is provided by a AC line fuse (2.5A for 2306, 3.5A for 3212). The power output stage of the amplifier is protected by an additional fuse (5A for the 2306, 10A for the 2312).

Rear-panel View

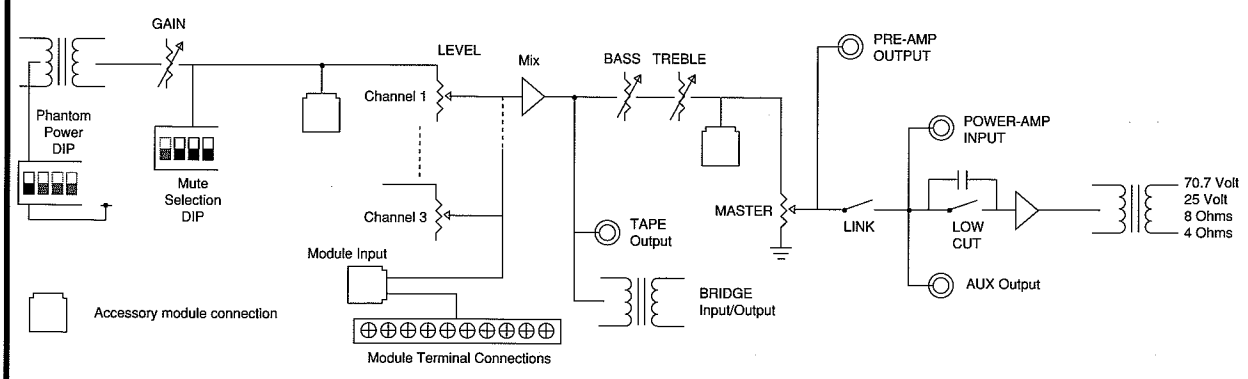


Unified Features

As part of University Sound's Unified Electronics™ Line, the 2306 and 2312 PowerDocks™ are fully compatible with all of the Unified Accessory Modules. This allows the 2306/2312 to be adapted to many different installations conveniently and inexpensively. All of the Unified Accessories come on circuit cards that can be plugged into the accessory slot on the 2306/2312 front panel. Any necessary external connections to installed modules are made on screw terminals on the rear panel of the 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



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 two Models shall be identical. The units shall be compatible with all University Sound Unified Electronics™ Line accessory modules, but shall also be fully functional without the accessory modules. 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 isolated, and be capable of independently matching microphone, line, or auxiliary input levels via rear-panel gain controls on each channel. 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 connectorsby 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. Module 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: 4Ω and 8Ω 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 pre-amplifier connections shall consist of a 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 connections, 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 5.6 KΩ 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 TAPE output shall also appear at the same point in the circuit as does the bridging input/output, but is at a standard unbalanced line level. This output shall use a standard RCA phono jack. The AUX output will be placed after the master volume control, carry an impedance of 1KΩ, and use a standard RCA phono jack.

For access to installed accessory or module 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 12.25" x 4.0" (41.1cm x 31.1cm x 10.1cm).

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 2306 and 2312 PowerDocks™ have been specified.

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Part #207-0048-00

University Sound
A Mark IV Company

2606/2612

Mixer/Amplifiers

UNIFIED ELECTRONICS

Product Data

- **60 Watt (2606) or 120 Watt (2612) RMS rated power output**
- **Six input channels with individual level controls and mic-to-line level gain adjustment**
- **Power outputs for 4Ω, 8Ω, 25V, and 70.7V speaker systems**
- **Five post-mix line-level connections: Pre-Amp out, Power-Amp in, Tape, Aux,and Bridge In/Out**
- **Unified Line expandability**
- **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**

Specifications:

Power Output	60 Watts RMS (2606) 120 Watts RMS (2612)
Power Outputs	4Ω, 8Ω, 25V, 70.7V
Power Bandwidth	50 Hz - 20,000 Hz ± 1 dB @ 0.5% THD
Frequency Response	20 Hz -20,000 Hz ± 1 dB
Signal to Noise Ratio	> 75 dB master vol max > 90 dB master vol min
Inputs	6 transformer balanced Mic to line levels on each
Equalization	Treble, Bass, & Low-Cut
Treble	± 10 dB @ 10 kHz
Bass	± 10 dB @ 100 Hz
Low-Cut	- 7 dB @ 60 Hz
Line-level Outputs	5.6 KΩ Bridge Tape output Aux output Pre-Amp out/Pwr-Amp in
Circuit Protection	AC line and output fuses
Power Supply	120 VAC, 60 Hz
Dimensions	
Height	4.0" (10.1 cm) 2 rack-units in 19" rack
Width	16.5" (41.9 cm)
Depth	12.25" (31.1 cm)
Weight	21 lbs (9.5 kg) (2606) 25 lbs (11.3 kg) (2612)

Description

The Model 2606 and 2612 PowerDocks™ are six 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 two models are identical in all specifications and characteristics.

The front panel features six level controls (one for each of the six 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 six inputs are transformer isolated and can accept mic, line, or auxiliary level inputs. Six input trim controls on the rear panel allow individual adjustment of each input to match these different levels. 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.

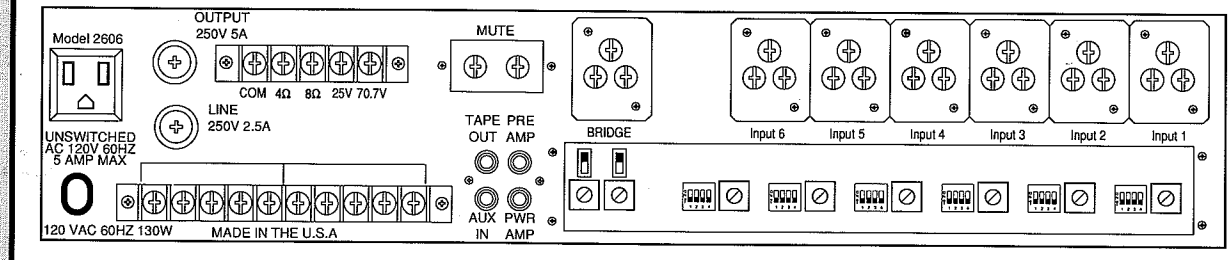
Each input of the 2606/2612 is capable of providing 24 VDC phantom power for use with electret-type microphones. Unlike other mixers that link all inputs to the same phantom power switch, each input's phantom power status on the 2606/2612 can be set separately. With this arrangement, electret mics can 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 pre-amplifier signal. The PRE-AMP output and POWER-AMP input pair provide a way to parallel the 2606/2612 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 a AUX output, both of which carry a 47KΩ line impedance 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.

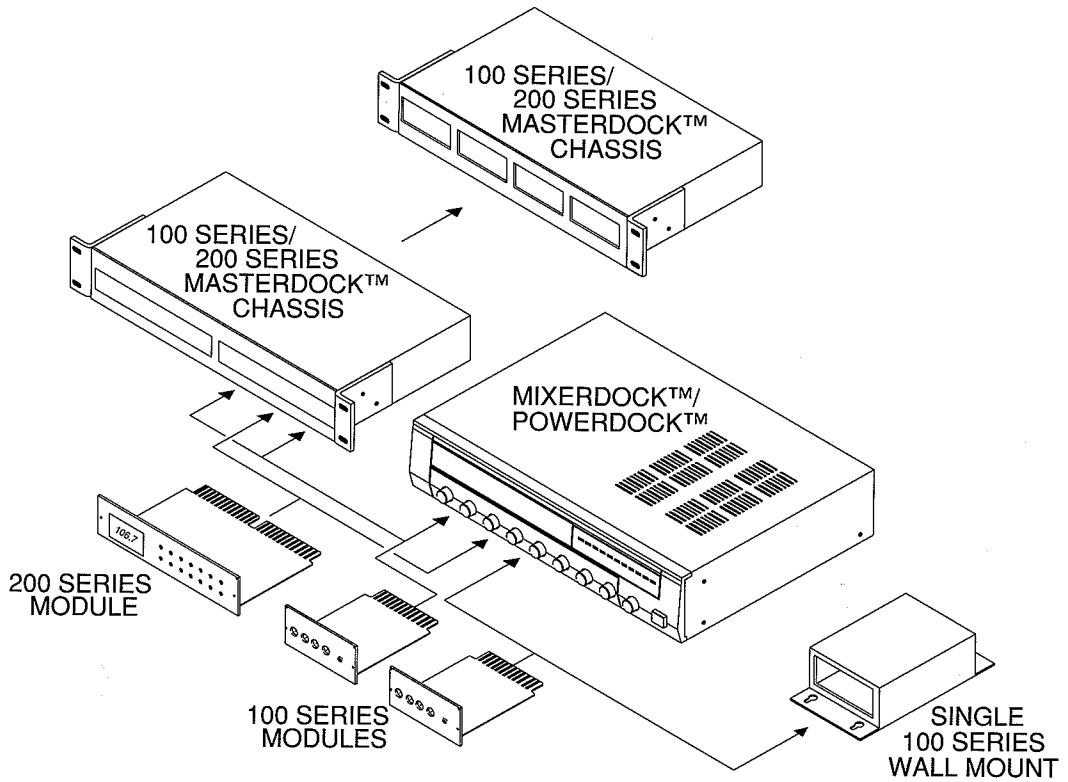
The 2606/2612 is powered by conventional 120 VAC 60 Hz lines. Circuit protection is provided by a AC line fuse (2.5A for 2606, 3.5A for 2612). The power output stage of the amplifier is protected by an additional fuse (5A for 2606, 10A for 2612).

Rear-panel View

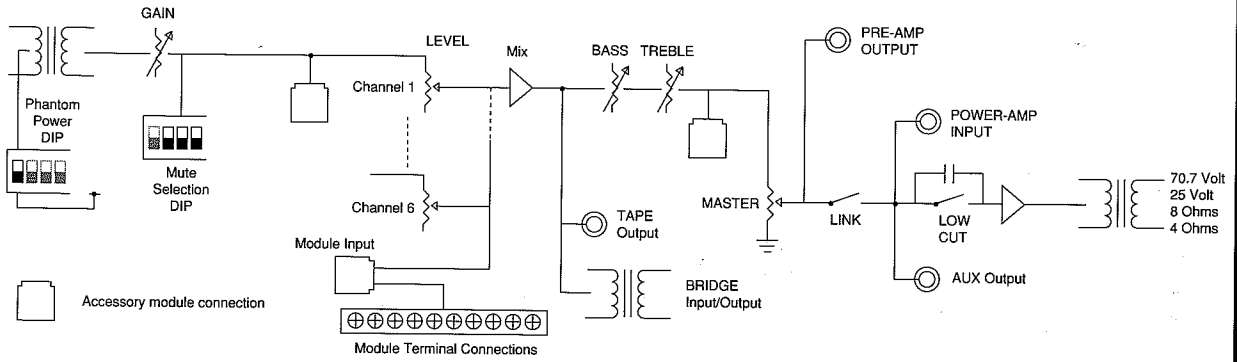


Unified Features

As part of University Sound's Unified Electronics™ Line, the 2606 and 2612 PowerDocks™ are fully compatible with all of the Unified Accessory modules. This feature allows the 2606/2612 to be adapted to many different installations conveniently and inexpensively. All of the Unified Accessory modules come on circuit cards that can be plugged into the accessory slot on the 2606/2612 front panel. Any necessary external connections to installed modules are made on screw terminals on the rear panel, 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



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

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

Each of the units' six inputs shall be transformer isolated, and be capable of independently matching microphone, line, or auxiliary input levels via rear-panel gain controls on each channel. 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 six 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 six 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. Any module 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: 4Ω and 8Ω 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 pre-amplifier connections shall consist of a 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 connections, 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 5.6 KΩ 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 TAPE output shall also appear at the same point in the circuit as does the bridging input/output, but is at a standard unbalanced line level. This output shall use a standard RCA phono jack. The AUX output will be placed after the master volume control, carry an impedance of 1KΩ, and use a standard RCA phono jack.

For access to installed accessory or module 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 six 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 12.25" x 4.0" (41.1cm x 31.1cm x 10.1cm).

The unit shall be powered from a standard 120 VAC 60 Hz grounded power source. There shall be an unswitched three prong AC receptacle on the rear of the unit. The Models 2606 and 2612 PowerDocks™ have been specified.

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