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MPS 2300 MANUAL

Operation and Owners Manual for the
MPS 2300
Music and Paging System

Printed in U.S.A.

Ivie Technologies
MPS 2300
MUSIC AND PAGING SYSTEM

Table of Contents

Introduction

Welcome.

Thank you for selecting an Ivie product for your audio system. Our goal is to be sure you remain happy with your choice for many years to come. Please do not hesitate to call the Ivie customer service department if you have any service problem or questions not answered in this manual.

Your Ivie MPS 2300 can be readily operated by anyone. However, we recommend that you use a qualified audio professional to install and set-up the system. In this manner, you will be assured of achieving optimum system performance.

Please consult the Table of Contents for fast guidance to the sections of interest. We recommend that all users read Section Two, Front Panel Controls and Indicators. This will provide operating information on the user front panel controls. For individuals installing this product we urge you to read the entire manual. Set-up instructions are contained in Section Two, Basic Set-up Instructions. All users should read Section Two, Unpacking and Inspection, and important Precautions.

Ivie Technologies warrantees all Series Two products to be free from defective material and/or workmanship for a period of three years from date of sale. Ivie will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use, provided the unit is returned to our factory via prepaid transportation. This warranty provides that examination of the returned product must disclose, in our judgement, a manufacturing defect. This warranty does not extend to any product which has been subject to misuse, neglect, accident, improper installation, or where the serial number has been removed or defaced. Manufacturer shall not be liable for consequential damages resulting from defects in materials and/or workmanship.

Introduction

Overview and Description.

The MPS 2300 Music + Paging System is an integrated 8-channel, 2-zone or stereo 1 -zone mixer amplifier designed specifically for music and paging applications. The numerous features incorporated to improve performance, ease installation and simplify use include:

- Switch selectable music source selection
- LED input signal and routing indicators
- AGC on mic channels maintain consistent page levels
- Adjustable muting trims set the exact amount of muting desired
- PowerLimit controls set maximum level, prevent clipping and protect speakers
- Remote control Source Select, Page and Music volume
- Switchable channel input sensitivity
- Gain, Treble, and Bass controls on music channels to match sources
- Active balanced inputs on Mic channels and Music channels 1 and 2
- Pre-out/Amp-in patch points and separate Aux inputs for each zone
- Direct 8 ohm/70V outputs improve damping and lower distortion
- Mono/Stereo linking switch
- +/- 15V power supply taps to power outboard signal processing
- Switched AC accessory outlet
- Delayed Turn-on/off and DC Fault speaker protection

The mixer/[re=amp has 2-Mic, 4-Music and 2-Aux input channels and two Zone outputs. Except for the Aux inputs, any channel may be routed to either or both Zones. Mic channels are keyed; grounding the appropriate terminal(s) activates the mic, routes it to the correct zone(s) and triggers the music muting circuit. Mic channels have AGC and EQ tailored to provide high intelligibility. Music channels are switched by front panel or remote selectors. Music channels have Gain, Treble and Bass controls. Separate AUX channels are provided for each Zone. Front panel controls adjust Page, Music and Master levels for

each Zone. LEDs monitor input signals and routing to each Zone while level meters monitor the output.

Zone A and Zone B each have a 150 watt power amplifier to drive 25-35V, 4-8 ohm loads or 70V lines. The direct-output circuit significantly improves damping while lowering distortion and is protected from shorts, mis-matched loads, and thermal over-temp. Speakers are protected from DC fault and the PowerLimit circuit prevents clipping, protects speakers from excess power, and/or limits overall level to a preset maximum.

The MPS 2300 is designed to provide years of trouble free performance. Quality components and contemporary high performance circuits assure optimum performance and long-term reliability. A three year limited parts and labor warranty is among the longest in the industry.

Unpacking and Inspection.

- **Check for carton damage while unpacking.**
- **Check the product for loose or rattling parts.**
- **Save the carton for return shipment, if required.**
- **If shipping damage is evident,** notify the transportation company immediately. File a claim with the carrier for shipping damage. Be sure to save the carton for the Shipper to inspect.

Important Installation Precautions.

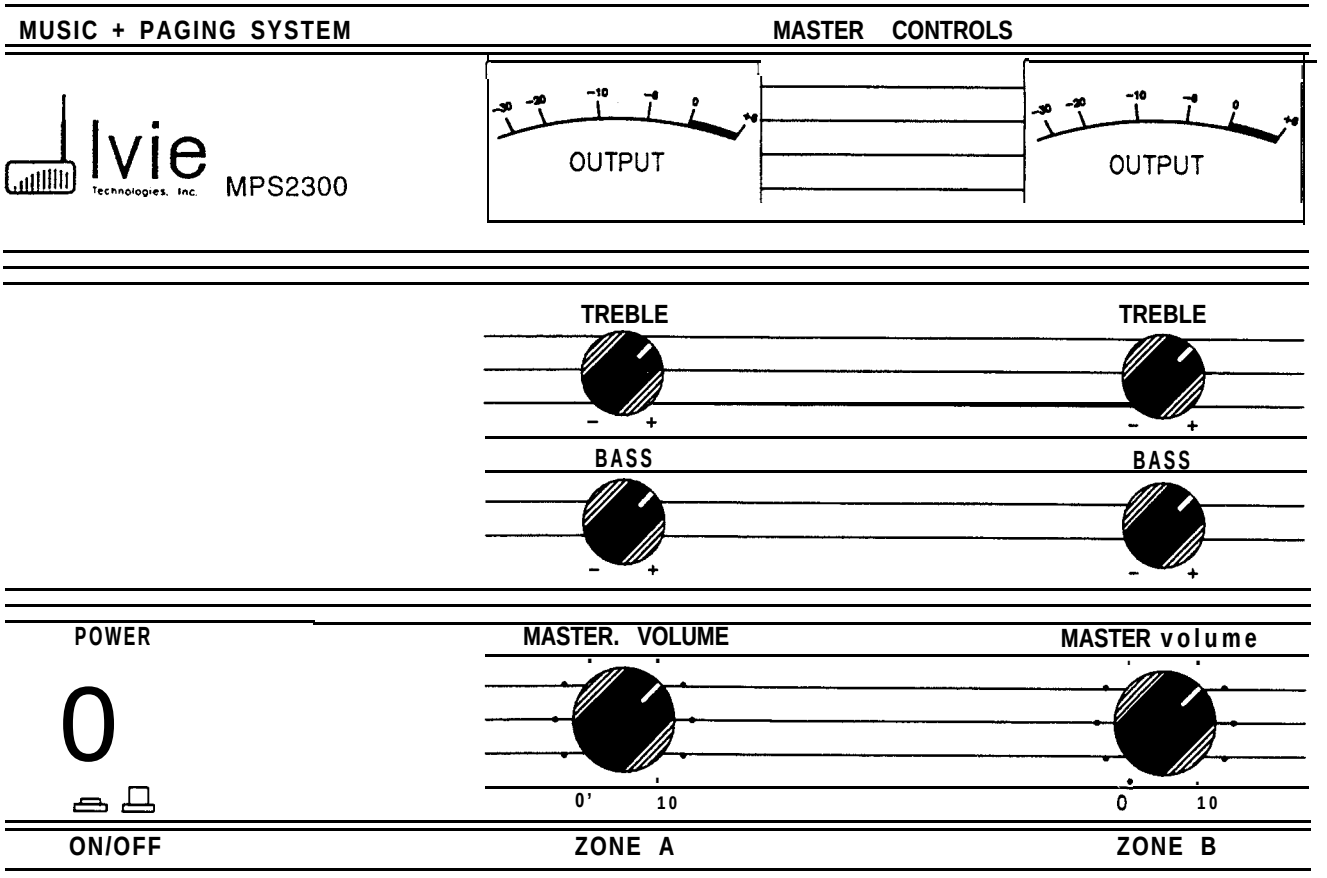
- **Keep power OFF when making any connections.**
- **Check the AC voltage before connecting the AC plug.** CONNECTION TO WRONG VOLTAGE WILL IMMEDIATELY DAMAGE THE PRODUCT, and voids the warranty.
- **Start with the Master Volume controls all the way** off. Turn the controls up gradually until normal operation is verified.
- **Never connect speaker barriers from different channels together or the same speaker to more than one channel.**
- **Do not connect speaker barriers to chassis or signal ground.**
- **Keep speaker wiring separate from input wiring.**
- **Always connect speakers with power off. Use heavy gauge cable with no frayed strands or damaged insulation.**
- **Failure to observe precautions could lead to fire or shock hazard.** Never plug in a damaged amplifier until the condition of the internal insulation is checked. If the internal fuse blows the amplifier section is defective and must be repaired or replaced.
- **Be sure to provide adequate support and ventilation.**

Basic Instructions

Safety Warning.

DANGEROUS VOLTAGE INSIDE. Do not remove the cover or expose to rain or moisture. Refer all servicing to qualified personnel. Warranty may be void if the product is repaired or tampered with by non-Ivie repair personnel. Please call the factory for service information and locations.

Front Panel Controls and Indicators.



Power Switch. Power Switch controls entire unit including outlet and +/- 15V power supply taps.

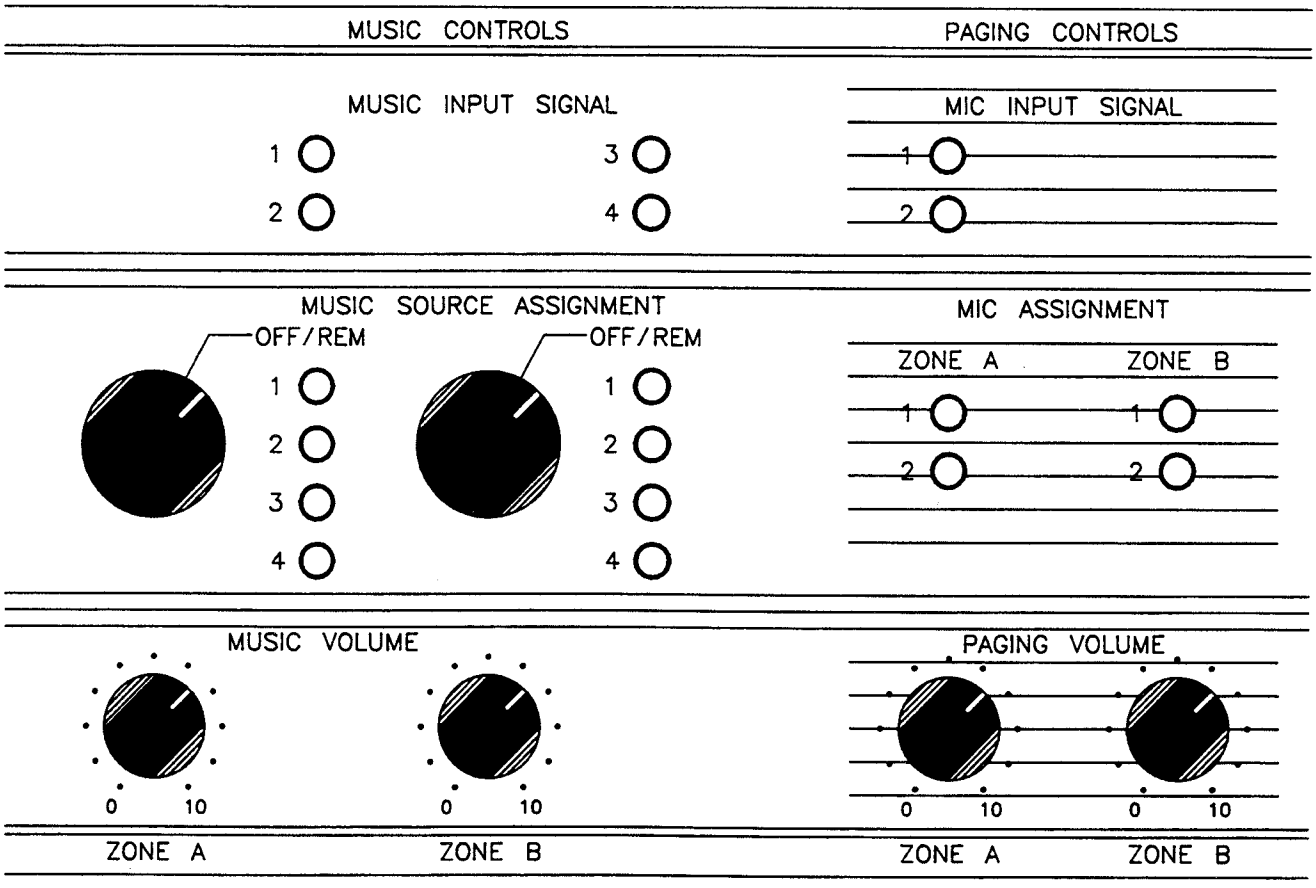
Master Volumes A & B Master Volumes A & B are the gain controls for each power amp. The nominal position for full output is all the way up. A center detent marks the -6 dB gain position.

Master Treble and Bass Controls are part of the power amplifier section and provide 10 dB of cut and boost at 15 KHz and 50 Hz to EQ speakers. A center detent marks the flat position.

Master Treble and Bass Controls.

Output Level Meters have extended range (30 dB) to monitor typical signal levels. Illumination of the meter indicates power on.

Output Level Meters.



Music Source Selectors select one of up to four music sources plus Off/Remote for each zone. Selector must be in Off/Remote position for remote selection of music source. In stereo mode the Zone A selector provides two stereo sources (left & right) instead of four mono sources.

Music Source Selectors.

Music Volumes are music source sub-masters for each zone. A center detent marks the nominal level position, with

Music Volumes.

+6 dB fully clockwise. A remote fader can be used on each control to provide up to 30 dB of attenuation.

Music Input Signal Presence and Assignment Indicators

Music input Signal Presence and Assignment Indicators monitor performance and operation and simplify set-up and trouble shooting. Yellow signal presence LEDs monitor each of the four Music channels. The indicators flicker in proportion to the signal present at the input. A set of green LEDs indicate assignment of an input to either or both Zones.

Page Volumes.

Page Volumes are microphone sub-masters for each zone. A center detent marks the nominal level position, with +6 dB fully clockwise. A remote fader can be used on each control to provide up to 30 dB of attenuation.

Mic Input Signal Presence and Assignment Indicators

Mic Input Signal Presence and Assignment Indicators monitor performance and operation and simplify set-up and trouble shooting. Yellow signal presence LEDs monitor each of the two Mic channels. The indicators flicker in proportion to the signal present at the input. A set of green LEDs indicate assignment of an input to either or both Zones.

Mono/Stereo Linking Switch.

Mono/Stereo Linking Switch (located behind front panel) converts the system from mono 2-zone to stereo 1-zone. The stereo position links input pairs (left and right) to music selector A and defeats selector B.

Rear Panel Controls and Features.

Paging Section.

Mic Gain Controls.

Mic Gain Controls set and match levels of mics. A center reference detent marks a nominal gain position with 20 dB of additional gain fully Clockwise.

Mic AGC.

Mic AGC (Internal) maintains a consistent level and compensates for excessive microphone proximity effect while helping prevent overload.

Voice EQ.

Voice EQ maximizes intelligibility while minimizing problems with feedback. Peak/cut type cuts at 1 KHz and boosts at 3 KHz with frequency extremes rolled off. A center detent marks the flat position.

Mic Input Sensitivity Switch.

Mic Input Sensitivity Switch selects mic or line input sensitivity.

Active Balanced Mic Inputs.

Active Balanced Mic Inputs provide hum and noise rejection, low distortion and controlled frequency response. Barrier strips provide long term gas-tight connections. Barriers may be jumpered to provide unbalanced input. Inputs are protected from excess voltage and levels.

Mic/Zone Keys.

Mic/Zone Keys grounding the terminal opens the mic and routes it to the selected zone(s). The mic may be hard wired on by jumping the barrier.

Music Section.

Music Gain Control.

Music Gain Control set and match levels of different types of sources. A center detent marks a nominal gain position with 20 dB of additional gain fully clockwise.

Treble and Bass EQ Controls.

Treble and Bass EQ Controls are tailored for music sources with 10 dB of boost or cut at 100 Hz and 10 KHz. Center detents mark the flat position.

Input Sensitivity Switches.

Input Sensitivity Switches select 0.1 V or 1 V input levels to accept a wide variety of music sources.

Unbalanced Music Inputs.

Unbalanced Music Inputs with phono connectors are provided for each music channel.

Active Balanced Inputs.

Active Balanced Inputs with barrier connectors on music channels 1 and 2 are provided for maximum performance when long cable runs are required.

Pre-Amp Out/Power Amp In.

Pre-Amp Out/Power Amp In insertion point for signal processing or routing of signal to external equipment. Unbalanced signal is pre-master volume, post-page and music volumes.

Muting Trims.

Muting Trims for each zone are adjustable between 0 and -30 dB, and have a quick, popless mute followed by a slow return to normal level.

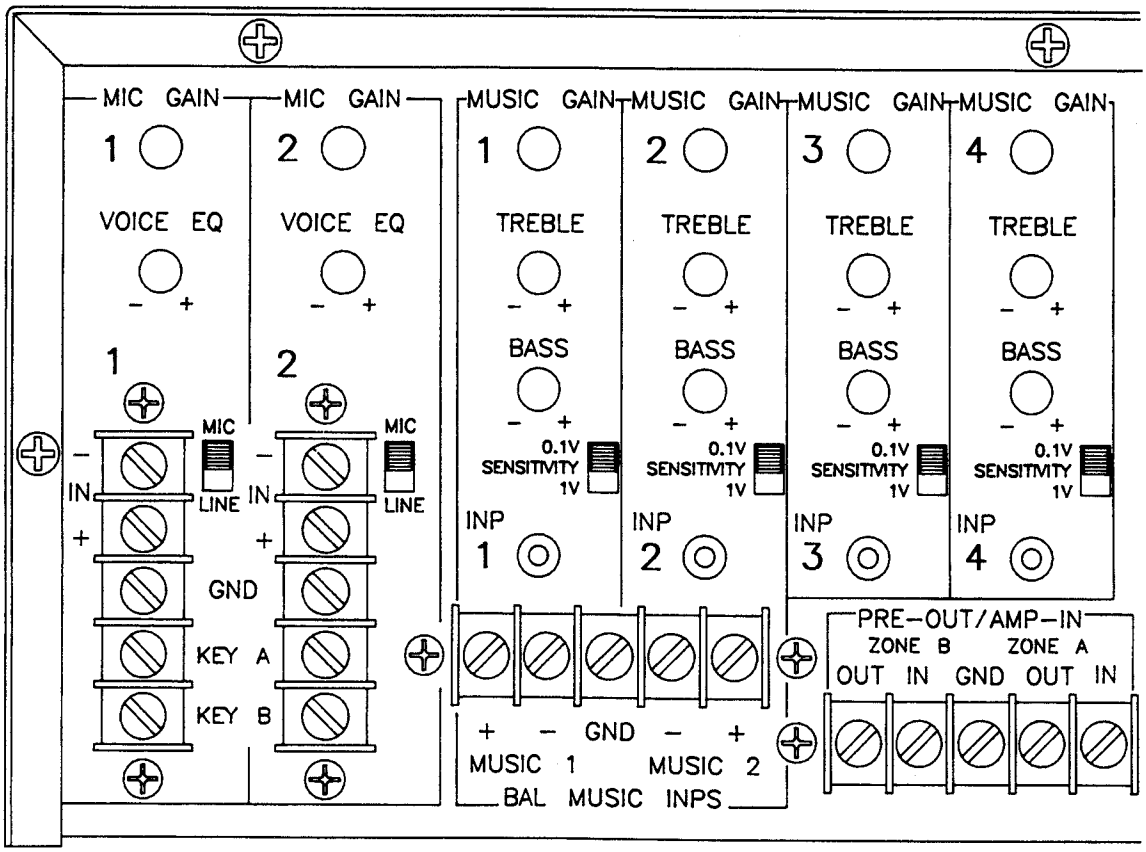
Basic Instructions

AUX Inputs and Gain Controls.

AUX Inputs and Gain Controls are provided for each zone bus. These inputs are post-Music and Page sub-masters.

Remote Control Terminals.

Remote Control Terminals provide remote capability through the use of simple unshielded DC control lines for music source selection, page, and/or music levels. Remote faders provide 30 dB of attenuation. Remote source selection is available when front panel selectors are set in the Off/Remote position. May be wired for stereo 1-zone operation.



Power Amp Section.

Clip Indicator.

Clip Indicator flashes during the presence of distortion. Useful for set-up of PowerLimit™

PowerLimit™ Control adjusts built-in limiter to prevent clipping, protect speakers, and/or limit maximum output level.

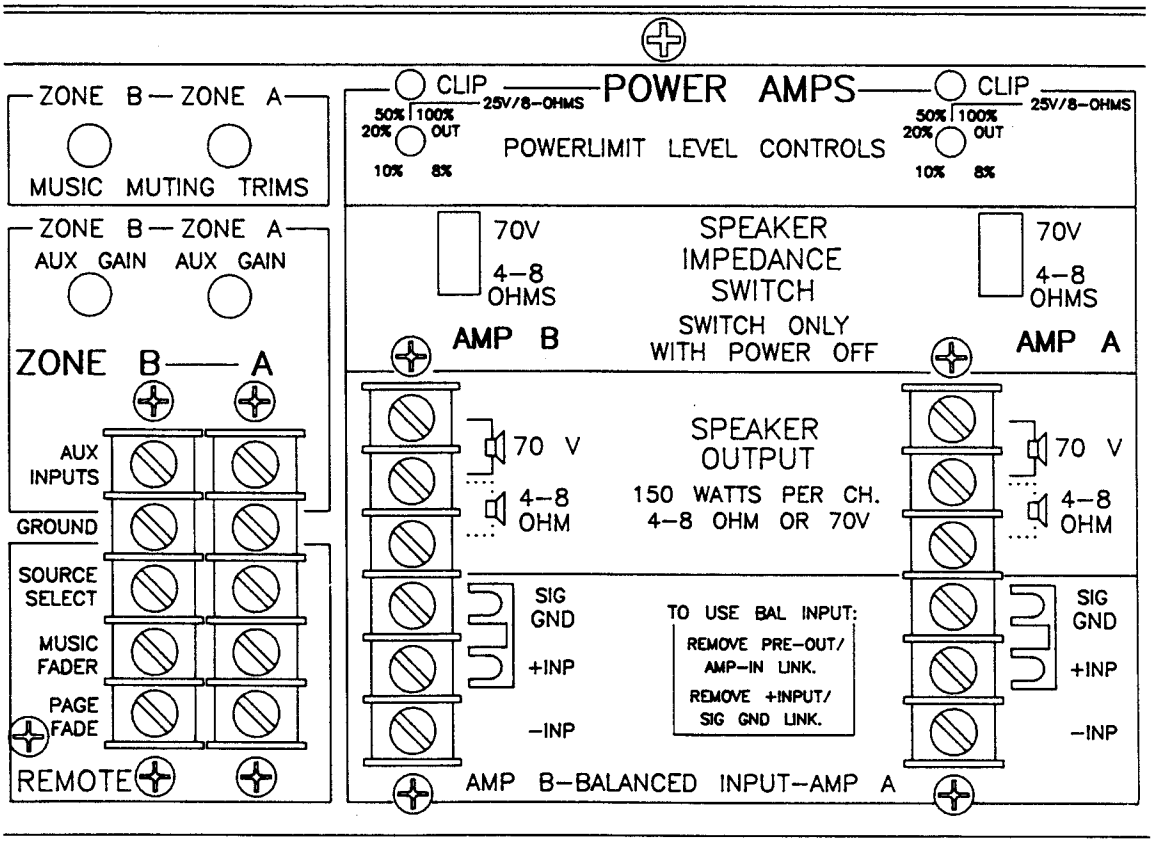
PowerLimit™ Control.

Speaker Impedance Switch selects output voltage for 70 V, 32 ohm systems or 25-35 V, 4-8 ohm systems without need of output transformer.

Speaker Impedance Switch.

Power Amp Output Terminals provide reliable long-term connections. Connections must be in accordance with output voltage switch setting.

Power Amp Output Terminals.



Power Amp Active Balanced Inputs with barrier connector are provided for each power amplifier. Unused during normal operation they are available if the need arises for long cable runs or summing a second input. Use of balanced input requires removal of the input shorting link.

Power Amp Active Balanced Inputs.

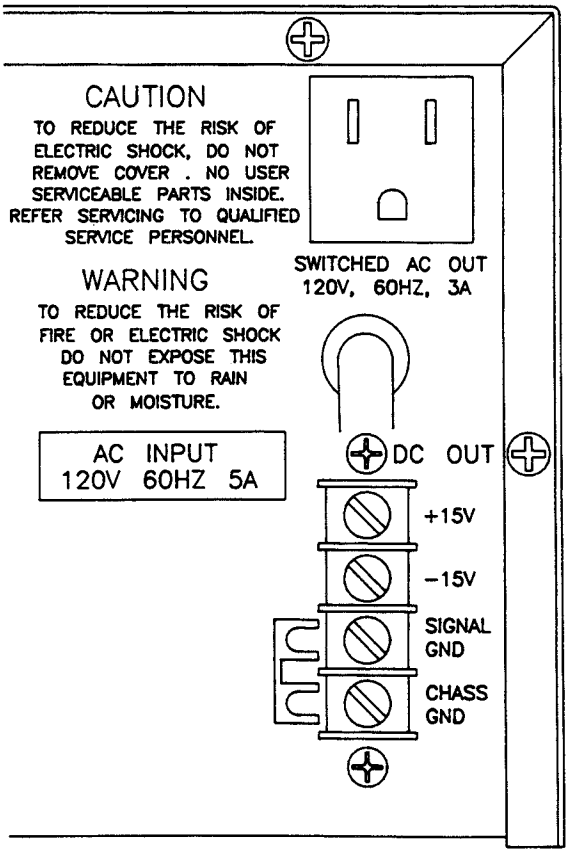
that converts the input section to unbalanced operation.

Switched AC Outlet.

Switched AC Outlet is provided for a music source or other piece of related equipment. Power is limited to 3 amps (360 watts).

Switched +/- 15V Power Supply Taps.

Switched +/- 15V Power Supply taps are provided to power outboard signal processing equipment or relays. Power supply limited to 500 mA.



Basic Set-Up Instructions.

These instructions cover normal use of the MPS 2300 in two-zone applications. See Section Three for installation instructions and stereo one-zone operation.

AC power.

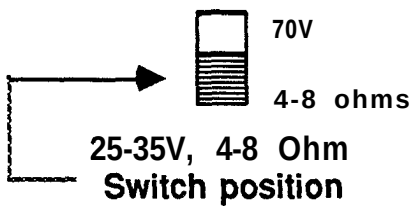
Connect AC cord to standard 120V, 60Hz, three conductor (grounded) outlet only. The amplifier will operate satisfactorily from 100-130V, but full rated performance will be met only at 120V.

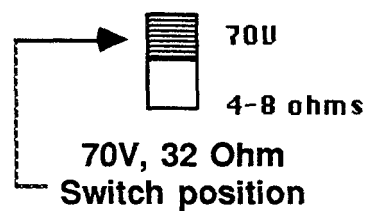
Chassis Ground.

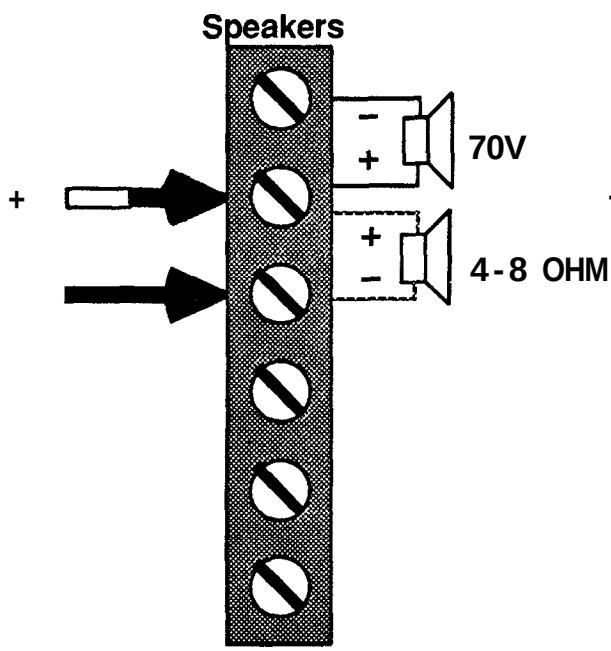
There is a provision for lifting signal ground relative to chassis ground. **For safety reasons do not remove the ground pin on the AC cord.** Electronic balanced inputs are provided for hum rejection, if needed. Use balanced input cables and ground lift strap if necessary to avoid hum and interference.

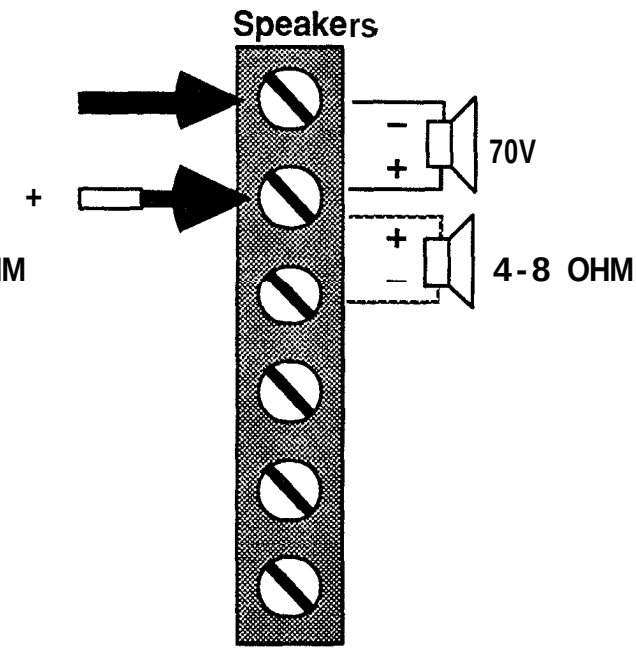
Speaker Connections.

Speaker connections must be made in conjunction with setting the speaker voltage switch. See diagram for proper hook-up. Make certain power is off during hook-up. **Do not change switch setting after speaker hook-up.** Switching output voltage with power on could cause speaker failure.

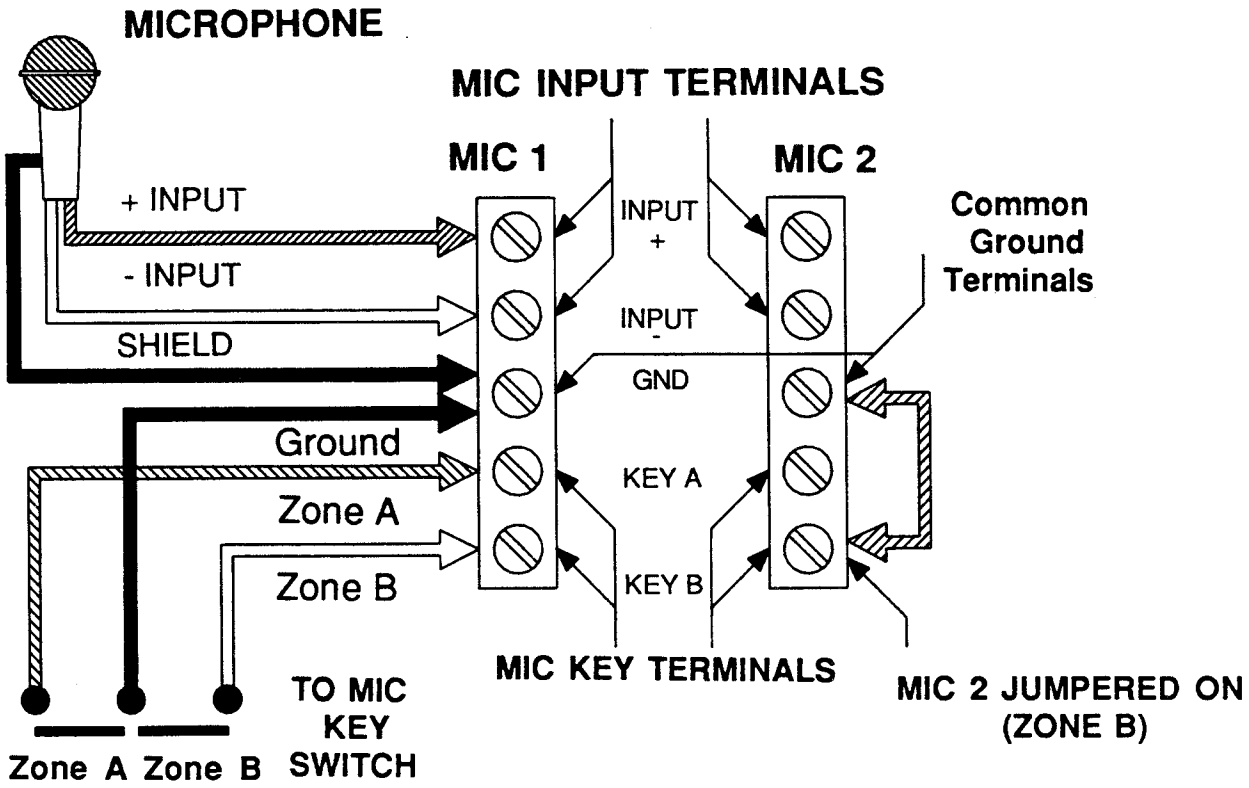








Paging Connections. Two types of connections, input signal and key switching to assign the paging signal are required.



Paging Inputs.

Balanced sources. Balanced sources connect the shield to Gnd, and the balanced pair of wires to +Input and -Input.

Unbalanced sources. Unbalanced sources install a shorting link from +Input to Gnd, connect the source's ground (shield) to Gnd (or the +Input link) and connect the paging signal to the -Input. To avoid switching noise in the

unbalanced line, do not use the mic shield as the ground connection for Zone Keys (see below).

Zone Keying.

Active electronic switching connects the mic channel to the output Zone(s) only during actual paging. This blocks noise and interference between pages, as well as activating the Music Muting. To page the desired Zone, ground the appropriate Key terminal on the barrier strip by using a switch in the mic or an external switch at the paging location. Wire Zone A and B keys together to page both Zones, or use a split paging switch to selectively page either or both Zones. Music will mute only in the Zones being paged. A Zone Key can be wired to ground to keep the mic permanently open, losing the ability to mute music while paging. In this case, any noise or interference at the paging input can be passed to the output between pages.

Paging Mic/Line Switch.

Most mics will use the high gain "Mic" position. Telephone sources and amplified mics may use the "Line" position. For telephone hook-up, see Section 3.

Mic Gain Control.

Mic Gain Control. See Gain Staging (below).

Music Connections.

All Music Inputs have phono plugs for unbalanced sources. Music Inputs 1 and 2 have barrier strip balanced inputs. Start with Channel 1 and work across to prevent skipped positions on the selector.

Unbalanced Inputs.

Use the phono jacks, or connect to the +Input of the barrier strip (Music Input 1 or 2 only), leaving the shorting link in place between Gnd and -Input.

Balanced Inputs (Music Inputs 1 and 2 Only).

Remove the shorting link to the -Input and connect the balanced pair to +Input and -Input.

Summing Stereo Pairs.

Sum a stereo source into Music Input 1 or 2 by connecting one channel to the phono plug and the other channel to the +Input of the barrier strip. Keep the shorting link from Gnd to -Input. Summing occurs in-phase through matched 1 OK resistors.

Music Adjustments.

Set the 0.1 V-l V Sensitivity Switch so the Music Gain control operates in a comfortable range (see Gain Staging, below). The Treble and Bass controls are flat on the center detent and have typical home-stereo response curves to match tone quality for each source.

Aux Inputs.

An unbalanced barrier-strip input with Gain control for each Zone bypasses all front controls except the Master controls for each Zone's power amp. Useful for alarm messages, chimes, masking or outboard mixes which should not be affected by Music or Paging.

Gain Staging.

There are two general approaches to setting the controls on the front panel. One is to set the Music Volume and Paging Volumes to control the relative loudness of the music and paging, and let the user adjust the Master Volume for each zone. The other is to pre-set the Master Volumes for each zone and let the user adjust the Music and Paging separately. Pre-set controls can be locked out and "site-specific" labels used to clearly identify the remaining controls. The installer's goal is to pre-set the rear panel and locked-out front panel controls so that the remaining controls operate over a well-controlled range, with the center detent being "nominal". Since there are three controls affecting the gain of any signal (two front-panel, and one rear-panel control), it is essential to adopt an organized approach to Gain Staging.

Control Range.

Front-panel Volume controls are -6 dB on the center detent providing limited "boost" above and unlimited volume reduction below the detent.

Gain Staging Adjustments.

Determine which controls will be user-adjustable, and set these on the center detent. Adjust the remaining front and back panel controls to obtain the desired levels. Start by establishing the paging level, as noted below.

Gain Staging the Paging Levels.

The peak level of the paging signal is controlled by the AGC circuit and can serve as an anchor around which to set the other levels. The AGC circuitry is designed so that the threshold of power amp clipping is reached when Paging Volume and Master Volume are full-up for a given Zone. For "normal" full power paging with a few dB of headroom, either the Master Volume or the

Paging Volume (but not both) may be reduced to the center detent. This would normally be the case with a 70V system where speaker taps have been accurately set for desired SPL. When Paging is desired at reduced level, the control to be locked-out can be reduced as necessary. Use the Mic Gain and Voice EQ on the rear panel to ensure adequate Paging Volume without feedback. The objective is to keep the front-panel user control on the detent. Adjust the remaining control(s) for desired level and then check the full range of the user control for acceptable behavior.

Gain Staging the Music Levels.

Once the nominal page level is set, the Music Volume (or Master Volume) for that zone can now be detented. Use Music Volume and Music Input controls to obtain the desired music level and EQ. Music Muting may now be set (Section Two, Music Muting Trims).

Gain Staging with Remote Control.

Remote Faders only decrease volume from the levels established by each Zone's Music Volume and Paging Volume controls. Set these controls for the maximum desired volume. The user will then have Remote volume control over a 30 dB range. Check Remote Fader positions if gain seems low or premature clipping (loss of headroom) occurs during Gain Staging.

Aux Level.

The only front-panel controls which affect the Aux Level are the Master Volume and Master EQ's. Set these controls in the desired position as determined above and then adjust the rear-panel Aux Gain for the desired Aux level.

Music Muting Trims.

Muting adjustment is separate for each zone, and ranges from 0 dB (no muting) to -30 dB. Make adjustments after completing music and page set-up. If using a remote Music Fader adjust after making connection since it affects the Muting Trim taper. To adjust:

1. Rotate Muting Trim control fully counter-clockwise (out).

2. While listening to music, repeatedly key the mic (in the zone you are adjusting) as you rotate the control clockwise.

3. Stop when you have achieved a satisfactory amount of muting. Most of the "action" will be in one half of the rotation depending on the presence of a remote Music Fader.

4. Repeat for the second zone.

PowerLimit Control.

Each amplifier channel is equipped with an adjustable limiter and clipping indicator which can limit overall level, protect speakers from excess power, prevent power amp clipping, and/or limit the output for 25V systems. As with any piece of processing equipment too much can be as detrimental as none at all. Use the PowerLimit control to do the job but no more. Too much limiting will flatten the natural dynamics of music and voice and cause excessive "pumping" or modulation of the level by the bass material present in the music. You cannot hurt anything by turning the control to maximum, but it may not sound good.

Limiting Overall Level.

Method One- not using PowerLimit

1. Put the Master and/or Music and Page volumes on maximum.

2. Adjust the input gains so that the level is within the desired range.

This is a troublesome method since you can't always be sure of the maximum input level. Both zones will have the same maximum level and it can lead to less than desirable gain staging with attendant noise problems. A much easier method is to use the PowerLimit control (which will also prevent clipping).

Method Two- using PowerLimit

1. Start with the PowerLimit control in the "out" position (full clockwise) and the front panel controls in their normal positions as determined by the previous set-up procedures.

2. increase the Master volume in one zone until you achieve the desired maximum level.

4. Dial in limiting (rotate counterclockwise) until you begin to hear the level drop. Stop.

5. Increase the front panel controls to full. The peak level should only increase somewhat; if necessary, dial in a little more limiting. Continue to make small adjustments until you are satisfied with the combination of maximum level and limiting action.

6. Repeat with the other zone.

Protecting Speakers from Excess Power.

Protecting Speakers from Excess Power. The PowerLimit control can be used to control maximum power delivered to the load. Since the PowerLimit circuit monitors output voltage, it will be of primary benefit when used to protect 4-8 ohm loads from excess power. (Speakers in 70V systems are tapped for the appropriate wattage). To use the PowerLimit control to protect 4-8 ohm speakers from excess power:

1. For 8 ohm speakers:

- **a.** Determine the manufacturer's power rating (eg 50 watts).
- **b.** Divide this number by 150 to get the percentage (eg, 50/150 = 33%).
- **c.** Adjust the PowerLimit Control to this value (eg, 33%).

2. For 4 ohm speakers:

- **a.** Determine manufacturer's power rating (**eg, 50** watts)
- **b.** Divide this number by two (eg, 50/2 = **25** watts).
- c. Follow steps **b.** and c. above (eg, 25/150 = 16%, set PowerLimit).

This method of setting the PowerLimit control is based on the speaker manufacturer's ratings. Follow personal experience in conservatively allowing for differences between ratings and real-world performance.

Preventing Output Clipping.

To allow full output but prevent clipping:

1. Put the PowerLimit control in the out position (full clockwise).
2. Play signal (preferably music) and increase the Master Volume until the Clip LED (on rear) of the affected channel lights.
3. Dial in (counter-clockwise) just enough limiting to extinguish the LED.
4. Increase the volume a little more. If the LED lights again, dial in just enough limiting to put it out.
5. Repeat with the other zone.

Note- the 100% setting on the PowerLimit control should be a very close first setting.

25V Systems.

Output voltage can be limited to 25V if required for a 25V system:

1. Use the 4-8 ohm speaker voltage hook-up and Speaker Impedance switch setting.
2. Adjust the PowerLimit to the 25V setting.

Pre-Out/Amp-In.

The unbalanced barrier patch point between the mixer and amplifier sections is post Music and Page Volume and AUX inputs but pre-Master Volume and tone controls. Removing jumper breaks connection.

Insertion of signal processing.

Insertion of signal processing- remove jumper, patch in equipment.

Routing of signal to other amplifiers

Routing of signal to other amplifiers- leave jumper in place if signal is to also go to internal amp; remove jumper if the sections are used separately.

Amplifier Active Balanced Inputs.

These inputs reduce hum and noise problems that sometimes occur when patching in signal processing equipment, using the amplifier and mixer sections separately, or when summing an external signal with the mixer signal.

Using Amplifier Active Balanced Input

Remove Pre-out/ Amp-in jumper (separates mixer and amp). Remove grounding jumper from +input of amplifier. Connect balanced input signal to amplifier. Use front panel Master controls to adjust amplifier level and EQ.

Inserting Signal Processing

As above, except connect mixer/pre-amp output to signal processing input, and return signal processing output to amplifier input. To obtain most of the benefits of balanced line inputs even if a balanced line output is not available, see Quasi-balanced Lines, Section 3.

Mixing with the Active Balanced Inputs

A second unbalanced source may be mixed through the active balanced input. Leave the Pre-out/Amp-in jumper in place unless signal processing is used (See above). Remove the shorting link on the amplifier +Input Connect the externally mixed input between Sig Gnd and +Input (The internal pre-amp signal goes to the -input). This mixes the external source out of phase with the internal pre-amp. This is not a problem when mixing uncorrellated sources, but is not suitable for summing stereo to mono.

Switched AC Outlet.

Due to AC Outlet restrictions make sure the appliance plugged in draws no more than 3 amps or 360 watts.

+/- 15V Power Supply Taps.

Regulated power supply taps are available to drive external signal processing equipment. Current available is limited to 500 mA. Do not overload supply or short leads to opposite polarity or ground. DC Power is controlled by the AC Switch. DC Power stabilizes promptly after AC turn-on, but remains on for a few seconds after AC turn-off. The 2300

power amplifiers have turn-on/turn-off muting to block signals during these intervals. Care should be taken when connecting pre-amp output or DC powered accessories to non-Ivie amplifiers which lack turn-on/turn-off muting.

Shelf Mounting.

Leave 2 to 3 inches clearance around sides, back and top to ensure adequate ventilation. Make sure the shelf itself is well mounted and ventilated.

Rack Mounting.

Remove four (4) screws holding front panel ends on each side. Replace with rack mounting brackets. Do one end at a time to keep front panel in position. Mount in rack.

When mounting more than one unit be sure to separate by at least one (1) rack space to assure adequate ventilation. Use of ventilated spacer panel is recommended. Fan cooling the rack is advised for heavy duty usage and/or high ambient temperature conditions.

Front Panel Set-up.

The front panel can be customized for each application using the following:

Knob Lock-out Plug.

Knob Lock-out Plug - can be used to replace any front panel control knob. Remove knobs by pulling straight out, using padded pliers if necessary. Replace with Lock-out Plugs for these situations:

Lock-out Paae and Music Volumes and use Master Volumes to change overall volume, keeping page and music levels at the same relative levels.

Lock-out Master Volume and use Page and Music Volumes to change music and page levels independently.

Lock-out Master Volume and Paae or Music Volumes to change only music or page level while fixing the level of the other.

Master EQ and Music Source Assignment can also be locked out as desired.

Site Specific Labels.

Site Specific Labels- a sheet of self-adhesive alternate names for sources and destinations is provided in order to label the front panel and/or remote control in terms the user will understand. Make sure the surface is free from oil and dirt before

applying. Cleaning surface with alcohol prior to application is recommended.

Music Source Selector Knob Rotation Limit.

Music Source Selector Knob Rotation Limit can be limited to those positions in use. To do so remove the knobs, and front panel. (CAUTION: Meter wires are delicate. Meters are held in by a foam cushion. Gently snap out of front panel when removing.) Remove hex nut on rotary switch. Lift and rotate the underlying stop washer to the desired position as marked on the rotary switch rim. Replace nut, panel, and knobs.

Remote Control.

The page volume, music volume and source selection for each channel can be controlled remotely using unshielded wires. Music and/or Page Levels can be reduced up to 30 dB using a 10K ohm pot to ground. Attenuation starts at 9K ohm. Since standard 10K ohm pots have a 25% tolerance, the Ivie remote uses a 20K ohm pot with parallel trimmer to obtain exactly 1 OK ohm. Music Sources 1, 2, 3, 4 are selected by switching in 6.8K, 4.3K, 820 ohm resistors to ground. Music Sources Off is achieved by switching to an open circuit.

Hook-up.

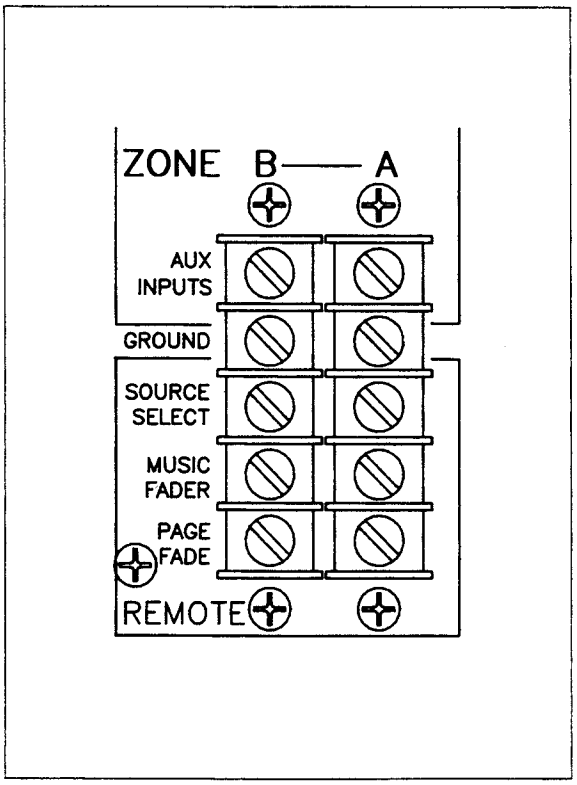
Hook-up:

1. The remote control panel mounts in a deep, 4 outlet electrical box.
2. Use shielded or unshielded control wire for connections, with a ground wire plus one wire for each remote function.
3. Connect the ground terminal and appropriate control terminals (whichever functions you want to remote) to the remote function terminals of the appropriate zone on the back of the MPS 2300.
4. Remove knobs and place lock-out plug on unused controls.

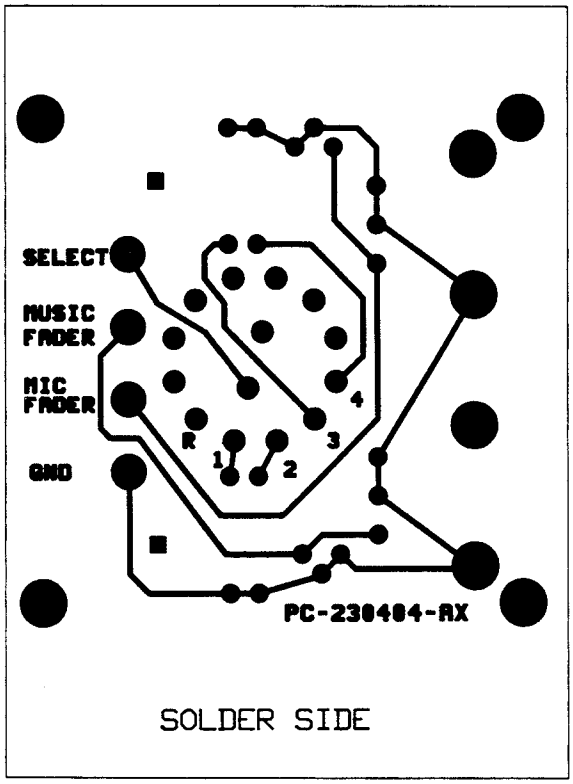
Set-up.

Set-up:

1. Source Selector- set front panel control on "Off/Remote", remove knob and replace with lock-out plug.
2. Music and Page Remote Controls- set remote to full volume. With signal present increase front



Rear Panel Remote Terminals



Remote Panel Terminals

panel control to maximum desired level, remove knob and replace with lock-out plug. Remote will provide up to 30 dB of attentuation, turn Remote Source Selector to "Off" for complete silence.

Operation.

1. An exact 10K ohm control will have about a 20% rotation from full before attenuation begins, with -10 dB at center.
2. Settings may take 1 second to stabilize.

Building Your Own Remote Control Panel

A schematic for the remote control circuit is provided in Section Six if you desire to build your own.

Stereo Operation.

A linking switch is provided under the front panel to convert the unit to stereo 1-zone operation.

Set-up.

1. Remove the front panel taking care not to damage the meter wires. (CAUTION: Meter wires are delicate. Meters are held in by a foam cushion. Gently snap out of front panel when removing.)
2. Locate the linking switch next to the left Music Volume (Zone A) and move to the stereo position as shown on the label.
3. Limit the knob travel of the selector (Zone A) to Off, 1 and 2. (See Music Source Selector Knob Rotation Limit above, for procedure)
4. Replace the front panel and knobs.
5. Zone B Source Selector is now defeated. Remove knob and replace with lock-out plug.
6. Music Source input channels 1 & 2 become "left and right" for position 1 on the Source Selector while inputs 3 & 4 are actuated on position two. Use rear panel Gain and EQ to balance Left and Right Inputs 1 & 2 and 3 & 4.
7. Wire the mic key to both zones if paging is desired on both "right and left" channels.

Operation.

1. Two stereo sources may be selected using the first two positions of the Zone A Music Source Assignment Selector.
2. The volume controls work independently. Changing the level is accomplished by turning both controls. Alter balance by adjusting each control separately.

Stereo Remote Hook-up.

Same as 2-zone with these exceptions:

1. Parallel wire the Music Fader terminals for both zones to the Remote Fader pot.
2. Reset Music Fader trimmer on Ivie Remote so that 5K ohm is measured across the fader with Fader fully clockwise.
3. Same for Page Volume.
4. Wire Source Selector to Zone A remote terminals only. Lock out positions 3 and 4, using the procedure shown in Music Source Selector Knob Rotation Limit, above. Change 0 from 4.3K to 2.2K

Stereo Remote Set-up.

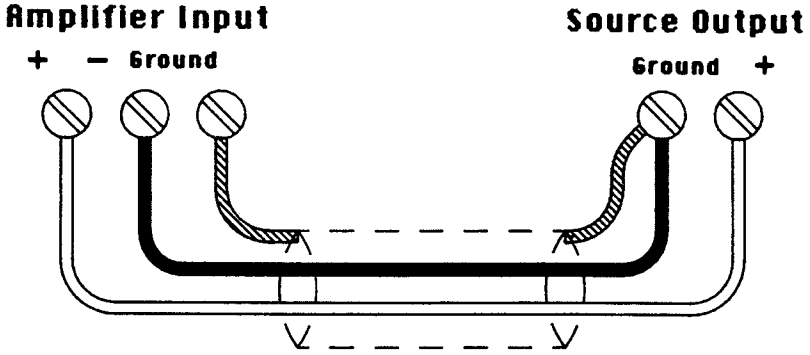
Same as two zone, except:

1. Use Music and Page volumes to set maximum level and balance.
2. Lockout both Source Selectors.
3. Remote Stereo Volume will track within +/- 1 dB.

Quasi-balanced Lines

Even if a balanced line output is not available, the benefits of balanced line input can still be obtained. Special cables will need to be made as follows:

1. Connect AMPLIFIER end of the cable to the plus, minus, and ground terminals of the input (music or amplifier)as shown in the above drawing.



2. At the SOURCE end, use a plug or lead that matches the unbalanced output connector. Connect the plus lead to the hot terminal. Connect the minus lead and shield together to ground AT THIS END ONLY.

DO NOT CONNECT THE MINUS AND SHIELD TOGETHER AT THE AMPLIFIER END OF THE CABLE. This maintains the separation of signal ground and shield (circuit) ground needed to obtain balanced line noise rejection. As a further refinement, a small variable resistance can be connected in series with the "minus" conductor, with a value roughly equal to the output impedance of the signal (usually less than 600 ohms). This resistance can be adjusted to null out any residual hum or interference.

Operational Troubleshooting

Summary.

This section contains troubleshooting hints which should help you locate a problem. Systematically check the inputs and outputs. Since this is a two zone system, double check the problem by confirming it on the other zone. Please refer to Section One for an illustration of the front and rear panels.

No Sound.

Check AC Power switch. Reset switch off/on. If unit operates only momentarily, service is required (DC fault).

Switch on but meters not illuminated. Check AC cord/AC service. A lamp plugged into the accessory outlet should light when the Power Switch is "On". If AC service is good and switch is "On", problem is with MPS 2300. Refer to Authorized Service personnel.

Switch on and meters illuminated. Check Master Volume control, make sure it is at the proper setting. Check meters while selecting a source which has an input indicator flashing.

Meters illuminated but input indicators not flashing. Problem may be with source equipment or connections (See below).

If meters are active. Check speaker connections and speakers.

If no meter action. Check Pre Out/Amp In jumpers or external signal processor if connected.. If jumpers disconnected, reconnect. If jumpers are in place check music and page volume controls and refer to following sections. If signal processing equipment is in line (equalizer, etc.), disconnect and replace jumpers. If sound comes back problem is with signal processing equipment or connections. Refer as necessary to Set-Up sections. If still no sound (page and music) refer to service personnel.

Very Faint Sound.

Check remote control if connected. Check input gains and sensitivity settings.

Operational troubleshooting

Page, but No Music.

Music Inout Signal LED's (yellow) not active. Make sure music source is operating. Check rear panel input connections, Music Gain, and Sensitivity switches. If connections are good, make sure source is working by plugging it into another piece of equipment, or another channel of the 2300. Sometimes the problem is corrosion of the contacts. If connections, input levels, sensitivity switches and source are good, the problem is in the unit.

Music Inout Signal LED's (yellow) active. Check front panel Music Volume and Music Source Assignment selector. Make sure setting is on an active input, not on Off/Remote (unless Remote is used) or an inactive input channel. If using Remote then check both the setting of the remote source selector, remote music volume and the connections. If setting the front panel control from Off/Remote to an active input restores sound, then the problem is in the remote or remote wiring/connections.

Music, but No Page.

The following guidelines illustrate how to use the front panel indicators to diagnose absence of paging function. We will use the yellow Mic Input Signal and the green Mic Assignment LED's to determine the problem. Key the Mic and attempt to page while watching the LED's.

Mic Inout Signal (yellow) works, but no Mic Assianment (green): shows that Mic signal is present but Mic key is not working. Confirm by grounding desired Mic Key on rear panel with jumper wire. If this restores operation, check Mic Key wiring and Mic switch.

Mic Assianment (green) works but no Mic Input Signal (yellow): shows that there is no signal from the mic input. Check Mic Gain on rear panel, and then substitute a second mic or signal source.

If both yellow and green Mic LED's are working, check Paging Volume (front panel) for that Zone. Otherwise, the unit requires servicing.

Weak but Clear Sound.

Usually indicates lack of input signal or incorrect gain (Volume) adjustment at some point. Check settings of

volume and input gain controls including Remote if used. Also insure rear panel PowerLimit is set to desired value (fully CW gives maximum output level). Test on other channel.

Weak and Distorted Sound.

Watch Output Meter and rear panel Clip indicator during distorted sound. If Clip indicator lights without full scale meter deflection, there is a shorted speaker cable, the speaker is faulty, or the amplifier channel is defective. If Clip indicator lights with full meter deflection, the amplifier is being overdriven, so cause of weak sound must be in speakers or wiring. If Clip indicator does not light during distortion, the distortion is happening outside the amplifier section. Check adjustment (gain staging) of all gain controls, input connections and sources, and speakers.

Sound Cuts In and Out.

Generally caused by a bad connection. If same on all sources, check Pre-out/Amp-in and speaker connections. If on a specific source, check input connections.

Sound has Bad Tone.

If on all sources, check Master EQ, outboard equalizer (if inserted) and speakers. If on a specific source, check input EQ and source equipment.

Lacks Power.

Check gain staging. Check PowerLimit control. If a 70V system, check to make sure Output Voltage Switch and speaker connections are set for 70V operation.

Unwanted Noises.

Hum.

Defined as a rounded 60 Hz tone. Severe hum is caused by broken cables or jacks, with disconnected ground (shield). Also caused by corroded connectors. A milder form of hum is usually caused by ground loops. Try repositioning the input cables away from the various components.

Buzz.

Defined as a very "razzy" kind of hum. Usually caused by interference from solid-state light-dimmer circuits. Follow the same precautions shown above, and make sure the electronics are not connected to an AC outlet which has a dimmer control.

Operational Troubleshooting

Hiss.

Defined as a smooth "shh"t noise. Always a problem with sensitive, high-gain electronic inputs, and usually starts at the point of weakest signal (usually the initial mic, phono, or tape source). Proper gain staging minimizes hiss by keeping signal below distortion but above the noise floor. To isolate the source of unwanted hiss, start at the Master Gain control and work backwards, reducing and then restoring Gains. You should hear a reduction of hiss and audio together at each point, showing the hiss is coming in earlier. When you find a control which lowers the audio volume, but not the hiss level, you know the hiss is coming in after that stage. Assuming that the hiss has not always been there, this indicates defective electronics.

Crackles.

Defined as a “popcorn” noise. If the crackle persists during pauses, this indicates defective electronics. Trace using the procedure shown under Hiss. Crackles which occur during audio peaks or when the electronics are vibrated usually indicate bad connections.

Radio Interference.

Defined as unwanted pickup of broadcast or CB radio. The mic input is more sensitive to RF pickup than the other inputs. However, if the installer has taken advantage of the Zone Keys, interference from mic channel will only be present during actual paging. If Zone Keys are wired “On” and mic element is turned on/off for paging, mic input is always active and RF pickup can occur at any time. The source of RF pickup can be traced by removing each input in turn until the interference stops. If interference continues with no inputs, RF is entering through speaker or AC wiring. Consult factory for assistance.

Cleaning.

The unit can be cleaned with a soft cloth and a mild non-abrasive cleaning solution, such as Windex. Avoid cleaning powders and scrubbing pads, as these will scratch and dull the finish. Be sure to unplug the unit orior to cleaning. Do not apply liquid directly to the surface. Dampen the cloth with the cleaning solution and wipe gently. You may wish to buff the surface lightly with a dry soft cloth.

Dust Removal.

After prolonged use, especially in dusty environments or in fan-cooled racks, the heat sinks may become clogged with dust. This will interfere with cooling, leading to higher temperature operation and reduced life. Dust build-up can be most easily removed by directing an air jet between the fins of the heat sinks, which are located inside the vented area on the top left side of the chassis.

User Maintenance.

User Maintenance. There are no periodic "tune-up" adjustments required. The unit should provide stable performance until parts fail from age. Internal servicing must be referred to qualified personnel. The amplifier may be inspected for loose screws on the outside. If any loose parts rattle around on the inside when the amp is turned over in all directions, please have it serviced immediately, as a loose part could lodge in a dangerous place and cause further damage or shock hazard.

Obtaining Service.

If the amplifier isn't working properly, please consult the troubleshooting chart in Section Four. If proper operation cannot be restored, the amplifier may require service. This must be performed by qualified technical personnel, to avoid shock hazard or improper repairs. If service should be required, please contact the Ivie Technologies, Customer Service Department at (801)766-7600 or return the unit directly to the Ivie factory in Lehi, Utah.

Please note that the Series Two warranty does not cover repairs made by non-authorized service personnel. Improper repairs may void future warranty coverage

If the unit is returned to the factory for service, it must be sent in the original type shipping carton. If you have not

saved your carton, see if your Ivie dealer/contractor has one, or call Ivie to have an empty carton sent for shipping. The Series Two warranty does not cover shipping damage caused by returning a product in an improper carton.

SPECIFICATIONS

Note: unless otherwise specified, all ratings shown with EQ controls flat, Master Volume controls on full, front-panel Music and Paging controls on center detent, and rear panel Input Gains set for rated sensitivity.

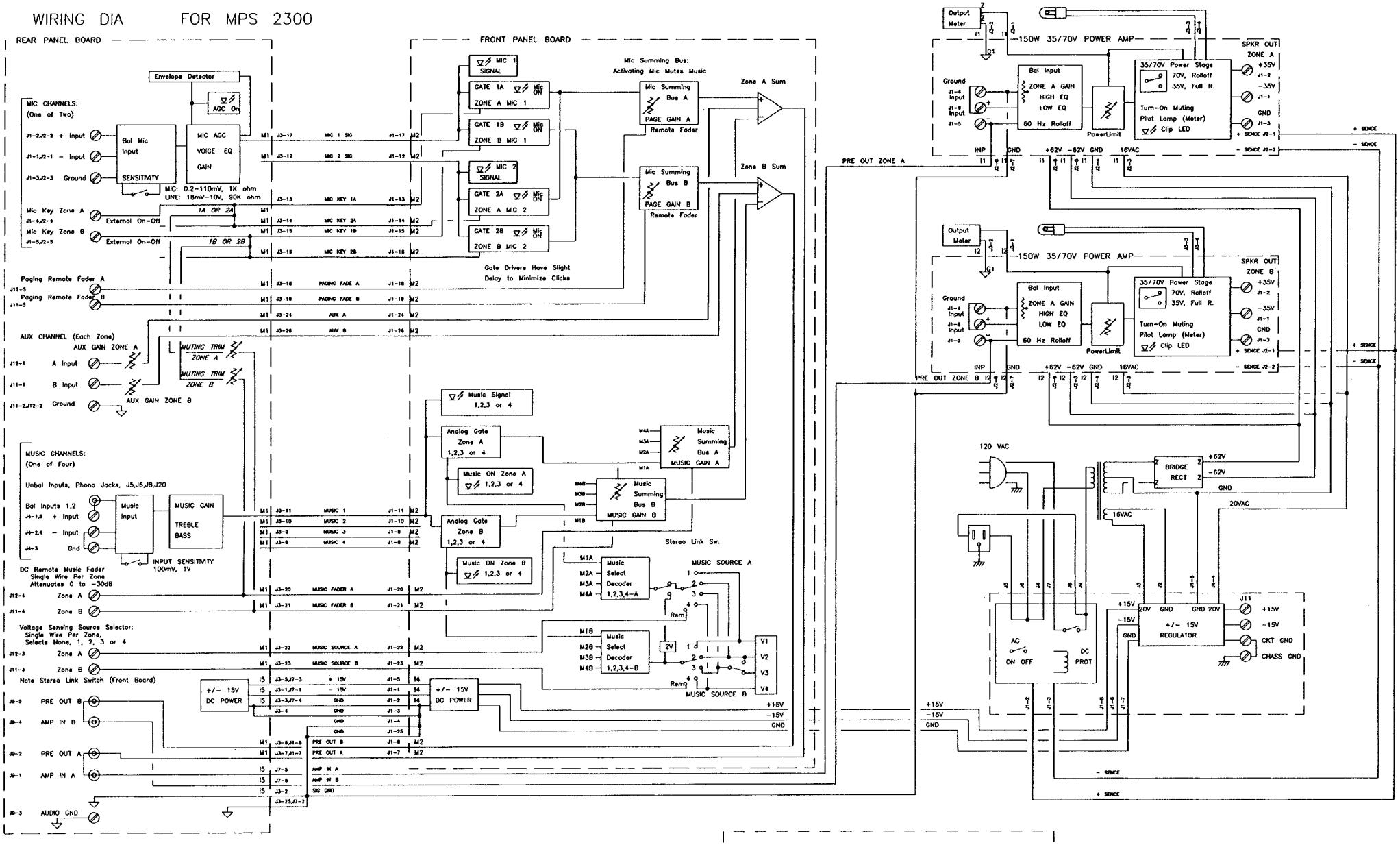
Type	8-channel, 2-zone, music and paging mixer amplifier
Special Features	Fixed mic AGC Adjustable music muting Adjustable PowerLimit™ output limiting Auxiliary +/- 15V power supply Remote control Page Volume, Music Volume and Music Source selection.
Output Power per channel, both channels driven	125 watts RMS, 20-20KHz, 0.1% THD, (8 Ohm/25V) 150 watts RMS, 20-20KHz, 0.1% THD, (70V) 175 watts RMS, 1KHz, 0.1%, (4 Ohms)
Frequency Response	20-20 KHz, -1.5 dB, (8 Ohm/25V) -3dB rolloff, 60Hz, (70V)
Distortion	(8 ohms or 70V) .01% THD @ 1 KHz
Input Sensitivity/Impedance	Mic Input channels: 0.8mV-190mV, 2K ohm balanced (mic position) 37mV-9V, 100K ohm balanced (line position) Music Input channels: 0.04V-10V, 10K ohm (0.1V Sensitivity sw) 0.4V-10V, 10K ohm (1V Sensitivity sw) Aux Input channels: 0.26V, 20K ohms
Pre-Amp Out	1V nominal, 100 ohm, (10V maximum).
Power Amp In	1V, 10K unbalanced, 20K balanced
Power Amp Outputs	4-8 Ohms/25V, direct coupled unbalanced 70V, direct coupled balanced
Output Regulation	Less than 0.04 dB no load to full load (Equivalent damping factor, 200)
Noise Band Pass: 20-20KHz, Tone Controls Centered	Master Volume on minimum: -100 dB Master Volume on maximum, 1V input: -83 dB Master Volume on maximum, 0.1V inp: -73 dB
Front Controls Each Zone	Master Treble: +/- 10 dB at 15 KHz Master Bass: +/- 10 dB at 50 Hz Master Volume: -6 dB on center detent Music Volume: 0 dB on center detent, +6 dB max Music Source assignment, 4-position + off/remote Paging Volume: 0 dB on center detent, +6 dB max AC Power (one only), push on/off
Rear Controls	Page channels (1 & 2): Mic Gain Voice EQ (cut at 1KHz, boost at 3KHz) Mic/Line switch Music channels (1-4): Music Gain Treble (+/- 10 dB at 10KHz) Bass (+/- 10dB at 100Hz) 0.1V/1V Sensitivity switch Aux channels (zones A & B): Aux Gain Music Muting Trims: (zones A & B) PowerLimit™ Controls: (zones A & B) Speaker 70V/4-8 ohm switches: (zones A & B)

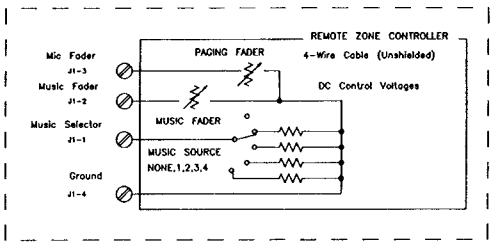
Schematics & Drawings

Ivie Technologies MPS 2300

Front Indicators	2 illuminated Output meters (zones A, B) 2 Mic Input Signal LEDs, Mic 1, 2 (yellow) 4 Music Input Signal LEDs, Ch. 1, 2, 3, 4 (yellow) 4 Mic Assign. LEDs, Mic 1, 2/Zones A, B (green) 8 Music Assign. LEDs, Ch. 1, 2, 3, 4/Zone A, B (grn)
Rear Indicators	2 Clip LEDs, Zones A, B (red)
Protection and Processing Circuits	Turn-on/off muting Mic AGC (fixed, with articulation boost) Adjustable PowerLimit™ output limiting Patented short circuit, open circuit, ultrasonic and RF protection (self resetting). Stable into reactive and mismatched loads. Inputs protected from overload. DC Fault speaker protection (DC shutdown) Power transformer & heat sink thermal protection Internal amplifier fault fuses
Auxiliary Power Supply	Regulated +/- 15V, 500 mA, 1.4A peak current Short-circuit protected, however shorting external supply will interfere with normal operation
Remote Functions Each Zone	Music Channel select, Page level, Music level. DC controlled using unshielded wiring.
Connectors	Music Channels 1-4: Unbalanced phono jacks Music Channels 1-2: Balanced barrier inputs. Mic Inputs 1-2: Balanced barrier inputs. Switched AC outlet All other connections: barrier Barrier Strips all on 3/8-inch centers.
Power Consumption	AC 120V, 60Hz, 5A Switched Accessory outlet, 3A
Cooling	Passive, side, top and bottom vents.
Temperature Range	-10°C to +60°C (12°F to 140°F)
Dimensions	5.25" Tall + 0.75" for feet 17" Wide (19" Wide in rack mount configuration) 12" Deep chassis + 0.5" front and back for knobs
Weight	29 lbs. net, 35 lbs. shipping weight
Color	Dark grey
Standard Accessories	6 knob lock-outs Sheet of Site Labels On-Site User's Manual
Optional Accessories	Remote control panel Rack mounting brackets

WIRING DIA FOR MPS 2300





3. QUICK-DISCONNECT SHOWN AS Z.
   1/4-INCH TABS, RECTIFIER AND POWER SUPPLY.
   0.110-INCH (?) TABS FOR OUTPUT METERS.

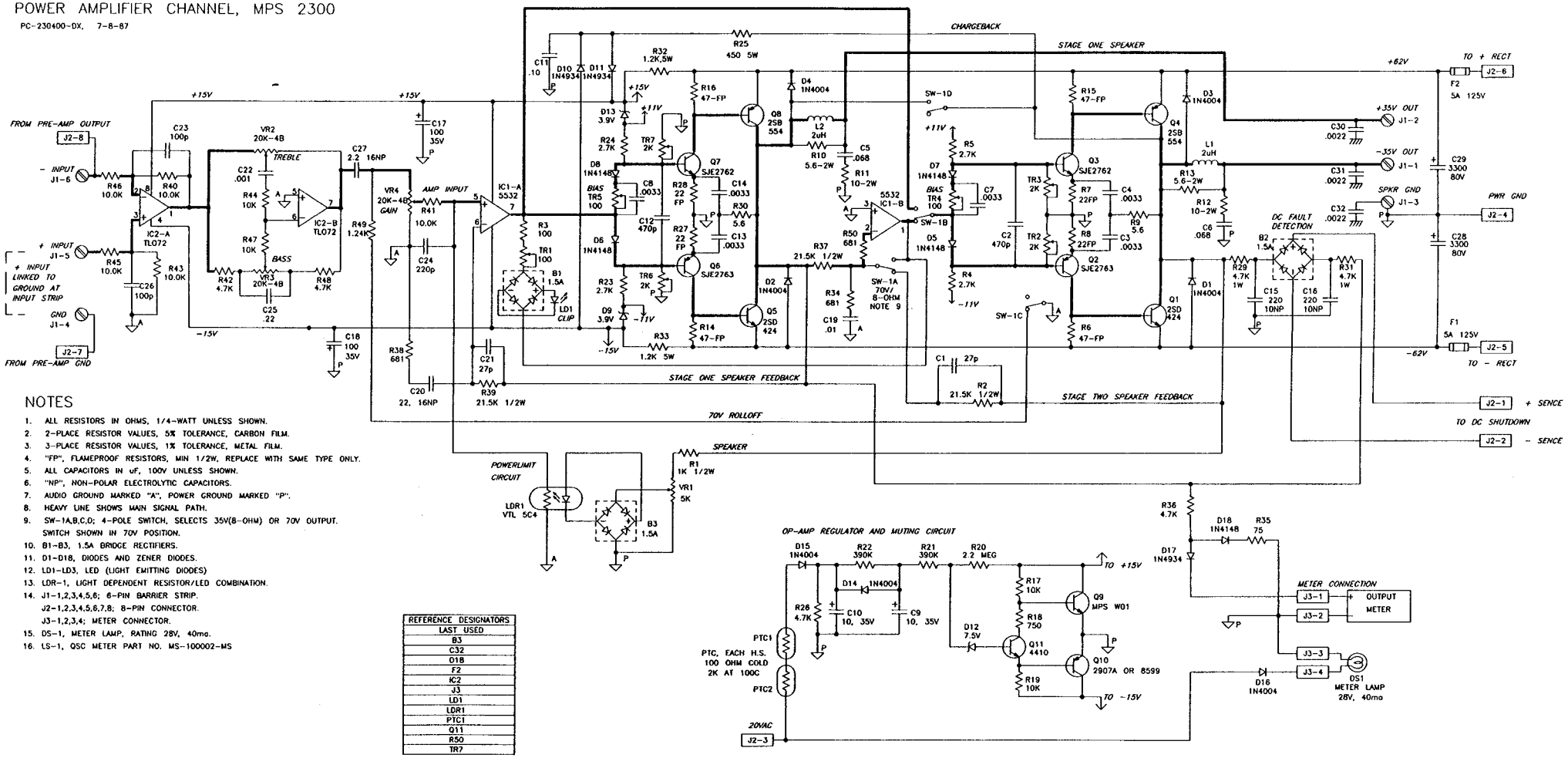
2. MULTI-CIRCUIT CONNECTOR SHOWN AS M(n).
   M1, 22 LINES PLUS GROUND (24 TYP), REAR PRE-AMP.
   M2, 22 LINES PLUS GROUND (24 TYP), FRONT PRE-AMP.

1. IDC (INSULATION DISPLACEMENT CONNECTOR) SHOWN AS I(n):
   I1: 8 POS, END TYPE, ZONE A AMPLIFIER.
   I2: 8 POS, THRU TYPE, ZONE B AMPLIFIER.
   I3: 5 POS, END TYPE, 15V POWER SUPPLY.
   I4: 3 POS, THRU TYPE, FRONT PRE-AMP.
   I5: 6 POS, END TYPE, REAR PRE-AMP.
   ALL MATCHING HEADERS, RIGHT ANGLE PCB MOUNT.

NOTES

POWER AMPLIFIER CHANNEL, MPS 2300

PC-230400-DX, 7-8-87



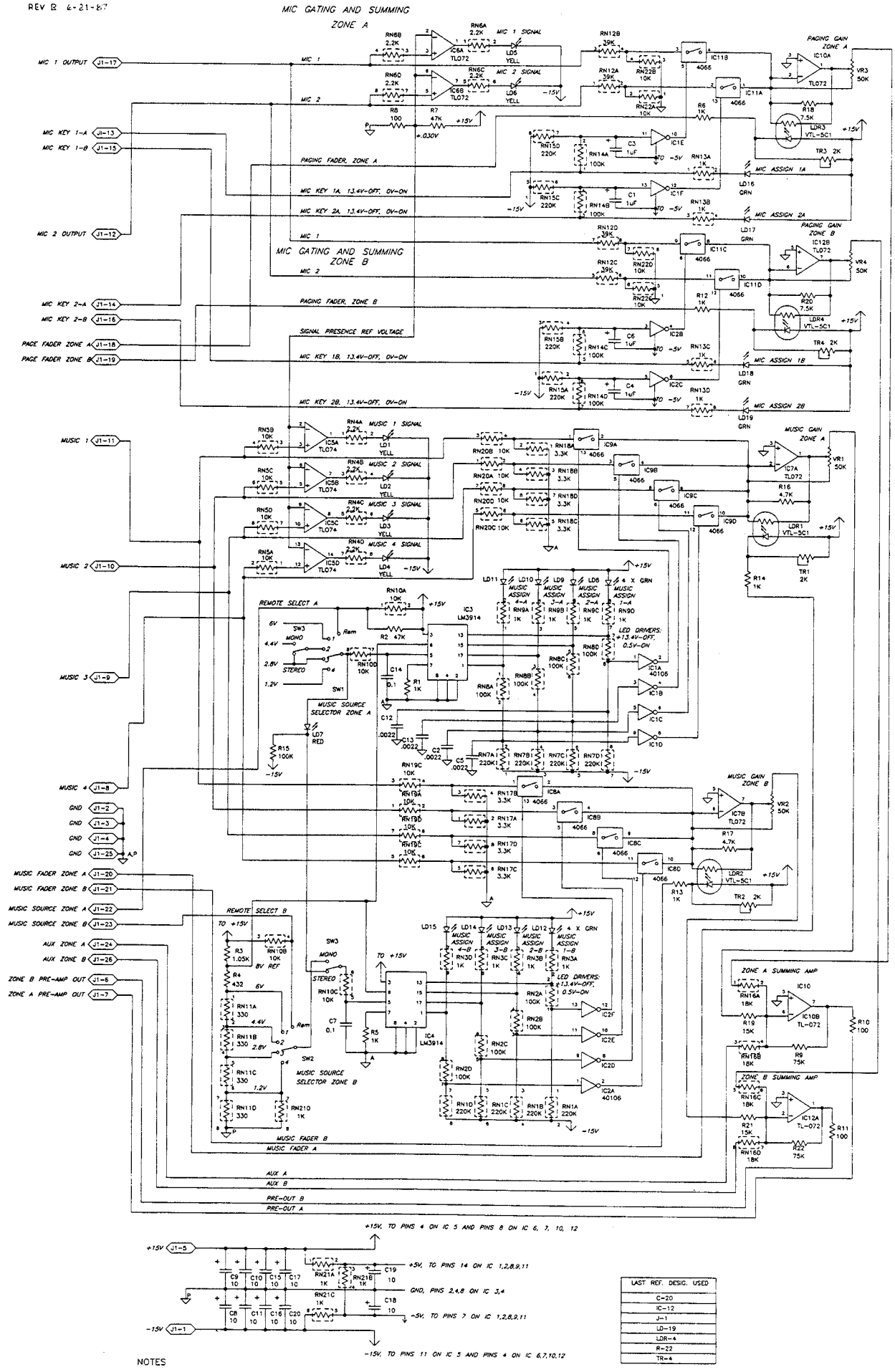
NOTES

1. ALL RESISTORS IN OHMS, 1/4-WATT UNLESS SHOWN.
2. 2-PLACE RESISTOR VALUES, 5% TOLERANCE, CARBON FILM.
3. 3-PLACE RESISTOR VALUES, 1% TOLERANCE, METAL FILM.
4. "FP", FLAMEPROOF RESISTORS, MIN 1/2W, REPLACE WITH SAME TYPE ONLY.
5. ALL CAPACITORS IN uF, 100V UNLESS SHOWN.
6. "NP", NON-POLAR ELECTROLYTIC CAPACITORS.
7. AUDIO GROUND MARKED "A", POWER GROUND MARKED "P".
8. HEAVY LINE SHOWS MAIN SIGNAL PATH.
9. SW-1A,B,C,D; 4-POLE SWITCH, SELECTS 35V(8-OHM) OR 70V OUTPUT. SWITCH SHOWN IN 70V POSITION.
10. B1-B3, 1.5A BRIDGE RECTIFIERS.
11. D1-D18, DIODES AND ZENER DIODES.
12. LD1-LD3, LED (LIGHT EMITTING DIODES)
13. LDR-1, LIGHT DEPENDENT RESISTOR/LED COMBINATION.
14. J1-1,2,3,4,5,6; 6-PIN BARRIER STRIP.
    J2-1,2,3,4,5,6,7,8; 8-PIN CONNECTOR.
    J3-1,2,3,4; METER CONNECTOR.
15. DS-1, METER LAMP, RATING 28V, 40ma.
16. LS-1, QSC METER PART NO. MS-100002-MS

REFERENCE DESIGNATORS LAST USED
B3
C32
D18
F2
IC2
J3
LD1
LDR1
PTC1
Q11
R50
TR7

MPS 2300 FRONT PRE-AMP PCB SCHEMATIC

REV B 6-21-87



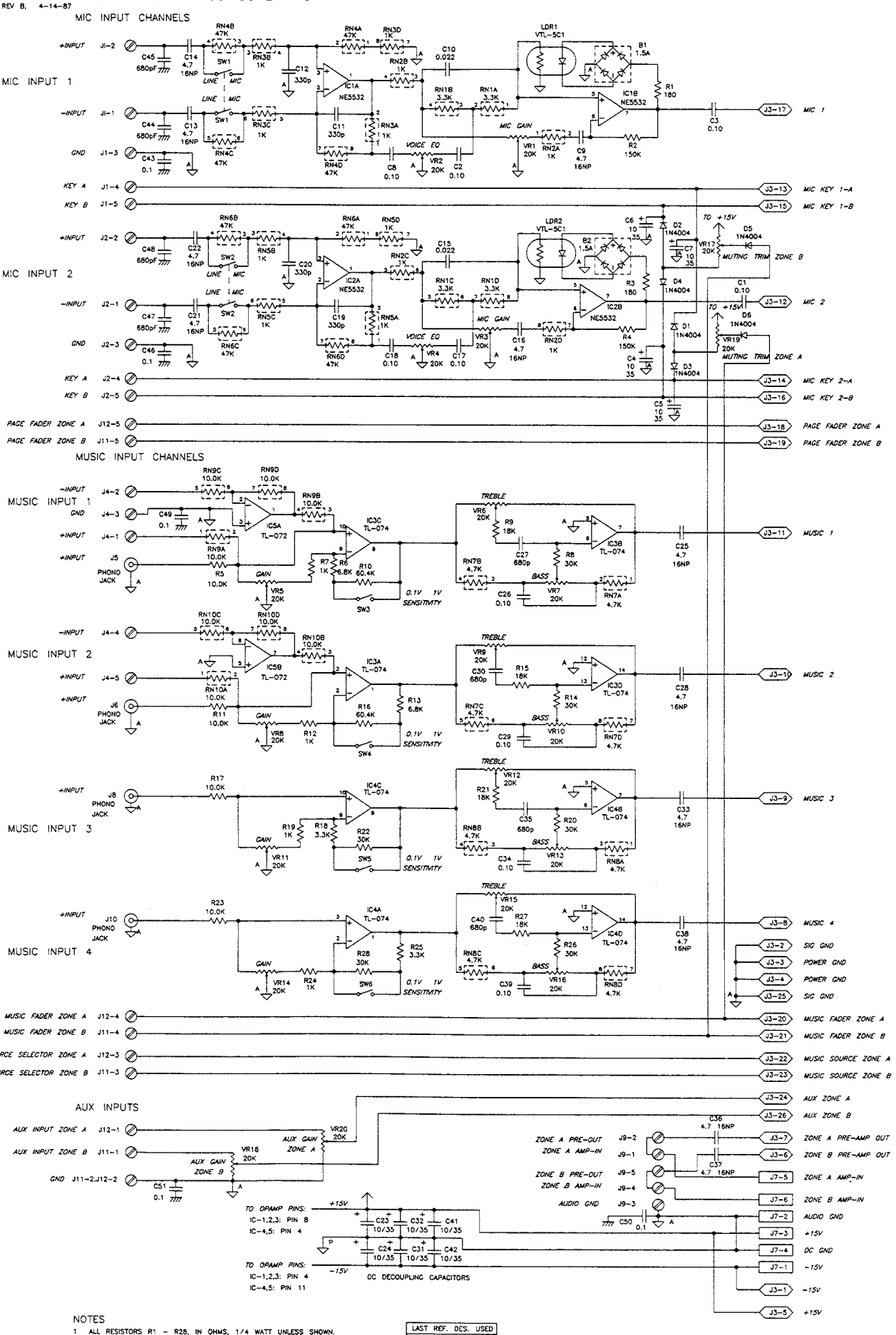
LAST REF. DESIG. USED
C-20
IC-12
J-1
LD-19
LDR-4
R-22
TR-4

NOTES

1. ALL RESISTORS R1 - R22, 1/4 WATT 5% UNLESS SHOWN.
2. 2-PLACE RESISTOR VALUES, 5% CARBON FILM
3. 3-PLACE RESISTOR VALUES, 1% METAL FILM
4. RESISTOR NETWORKS RN1 - RN22, SECTIONS A,B,C,D, SHOWN IN DASHED OUTLINES.
5. ALL CAPACITORS C1 - C20 IN uF, 25V MIN. UNLESS NOTED.
6. AUDIO GROUND SHOWN "A", POWER GROUND SHOWN "P"
7. LD1 - LD19, LED (LIGHT EMITTING DIODES).
8. LDR1 - LDR4, LED/PHOTOCELL (LIGHT DEPENDENT RESISTOR).
9. TR1 - TR4, TRIMMER RESISTORS.
10. J1, 26-PIN RIBBON CONNECTOR

MPS 2300 REAR PREAMP PCB SCHEMATIC

REV B, 4-14-87

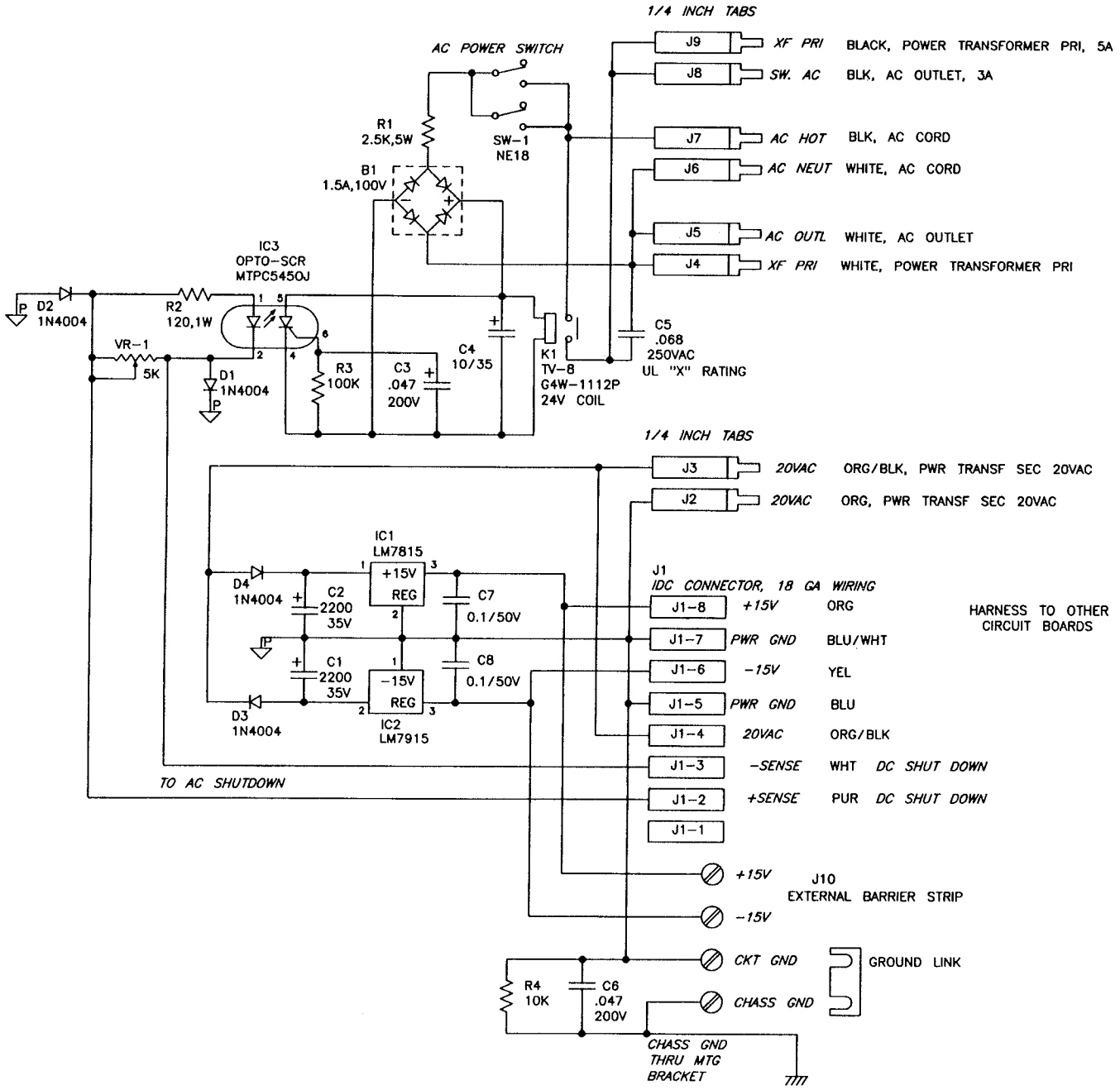


NOTES

1. ALL RESISTORS R1 – R28, IN OHMS, 1/4 WATT UNLESS SHOWN.
2. 2 PLACE RESISTOR VALUES, 5% TOLERANCE, CARBON FILM.
3. 3 PLACE RESISTOR VALUES, 1% TOLERANCE, METAL FILM.
4. RESISTOR NETWORKS RN1 – RN10, SECTIONS A,B,C,D SHOWN W/DASHED LINES
5. ALL CAPACITORS C1 – C42 IN uF, 100V UNLESS SHOWN.
6. "NP" NONPOLAR ELECTROLYTIC CAPACITORS.
7. AUDIO GROUND MARKED A, POWER GROUND MARKED P
8. D1 – D6, 1A DIODES
9. B1 – B2, 1.5A BRIDGE RECTIFIERS
10. J1, 2, 4, 9, 11, 12: 5-POSITION BARRIER STRIPS
    J3: 26-PIN RIBBON CONNECTOR.
    J5, 6, 8, 10: PHONO JACKS
    J7: 6-PIN IDC CONNECTOR
11. PCB, PC-230403-REV B

LAST REF. DES. USED
C51
J12
IC5
D6
LDR2
R28
RN10
VR20
SW6

SI TWO 15V REGULATOR/DC SHUTDOWN
RE\ /-28-87

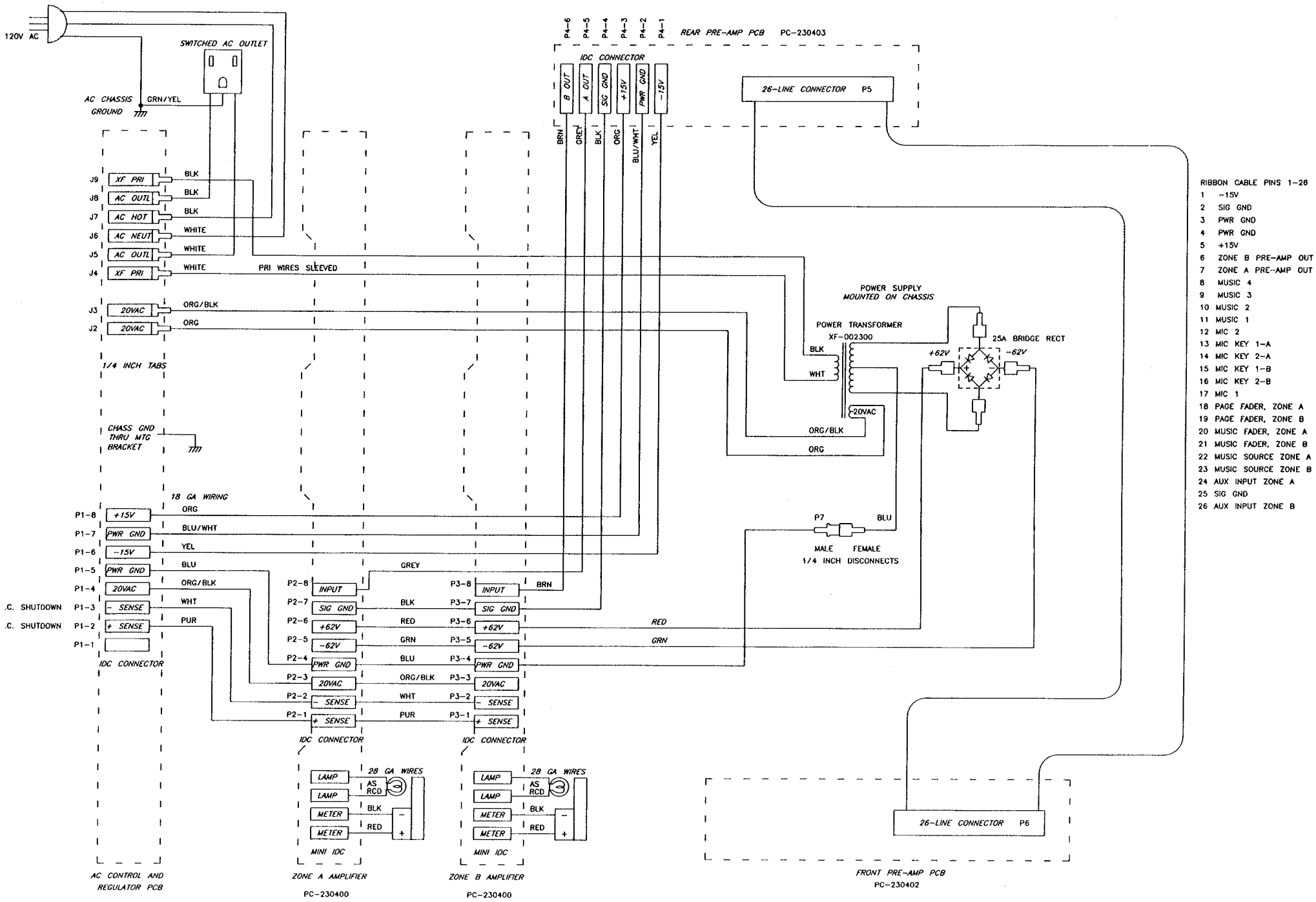


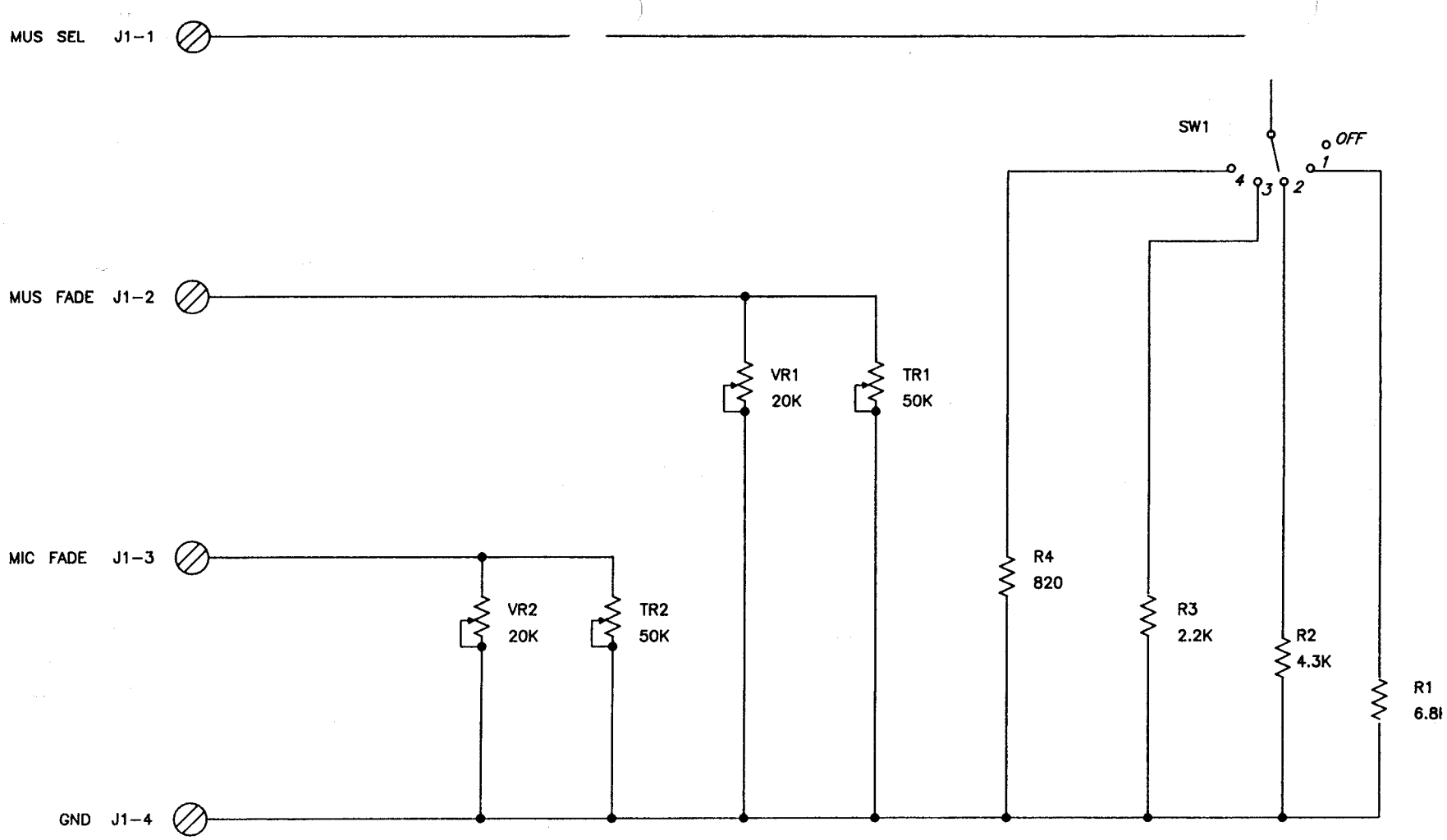
REFERENCE DESIGNATOR
LAST USED
B1
C8
D4
IC3
J10
K1
R4
SW1
VR1

1. ALL RESISTORS ARE 1/4 W 5% UNLESS OTHERWISE NOTED.

NOTES: UNLESS OTHERWISE SPECIFIED.

MPS 2300 AC POWER SUPPLY AND HARNESS





1. ALL RESISTORS ARE 1/4W 5%

NOTES: UNLESS OTHERWISE SPECIFIED;

INSTALLER SITE DATA LOG

The purpose of this Log is to provide a handy reference sheet for trouble shooting or problem solving. Record all settings and file for future reference.

Instructions: Mark setting number or range in either manner.

Setting: Vol

5  **Range: Vol** 3-5 

INSTALLATION SITE:_____ **DATE:**_____

MODEL: _____ **SERIAL NUMBER:** _____

INSTALLER'S NOTES:

Front Panel

Master Volume Controls

Zone A (1-10) ____ ○

Zone B (1-10) ____ ○

Master Bass

Zone A ○ Zone B ○

Master Treble

Zone A ○ Zone B ○

Music Source Assignment

Zone A (1-4) ____

Zone B (1-4) ____

Music Volume

Zone A (1-10) ____

Zone B (1-10) ____

Paging Volume

Zone A (1-10) ____

Zone B (1-10) ____

Rear Panel

Mic Gain 1 ◯ Mic Gain 2 ◯

Voice EQ 1 ◯ Voice EQ 2 ◯

Mic ___ Mic ___
Line ___ Line ___

Source _____

Music Channel 1

Gain ◯
Treble ◯
Bass ◯
Sensitivity ◯ or .1V ___ 1V ___

Source _____

Music Channel 2

Gain ◯
Treble ◯
Bass ◯
Sensitivity ◯ or .1V ___ 1V ___

Source _____

Music Channel 3

Gain ◯
Treble ◯
Bass ◯
Sensitivity ◯ or .1V ___ 1V ___

Source _____

Music Channel 4

Gain ◯
Treble ◯
Bass ◯
Sensitivity ◯ or .1V ___ 1V ___

Source _____

Music Muting Trims

Aux Gain Levels Zone A ◯

Zone B ◯

Power Limit Level

Zone A ◯

Zone B ◯

Speaker Impedence

Location _____

Speakers Zone A

# of speakers _____

Type _____

Total Load _____

Output Voltage Switch Setting _____

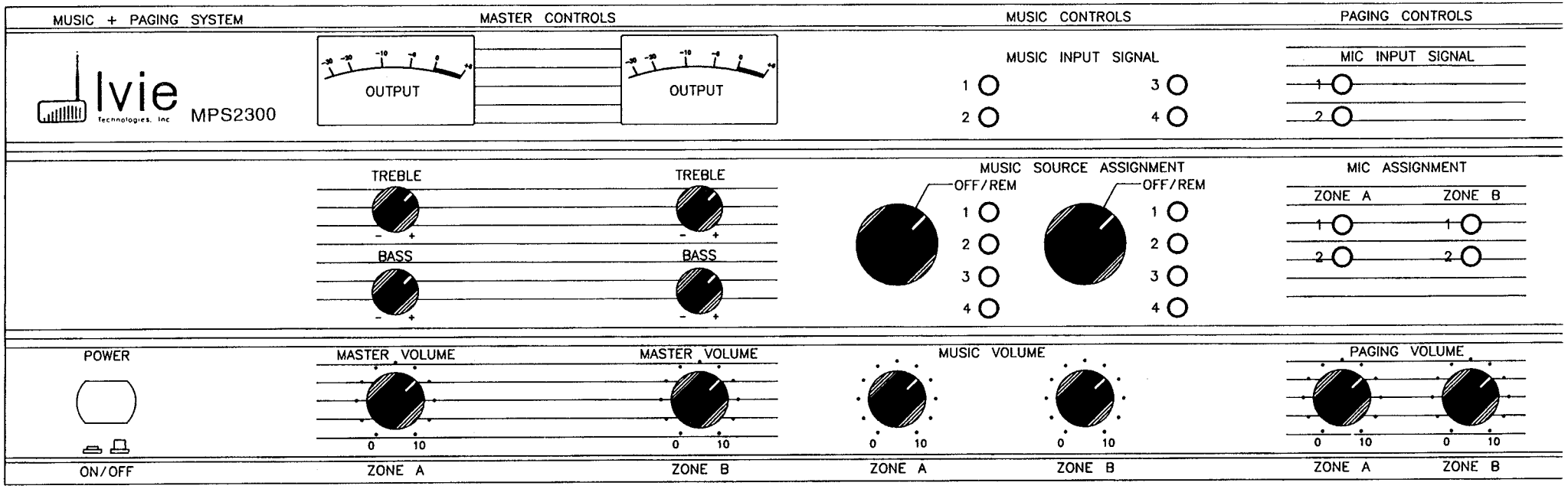
Zone B

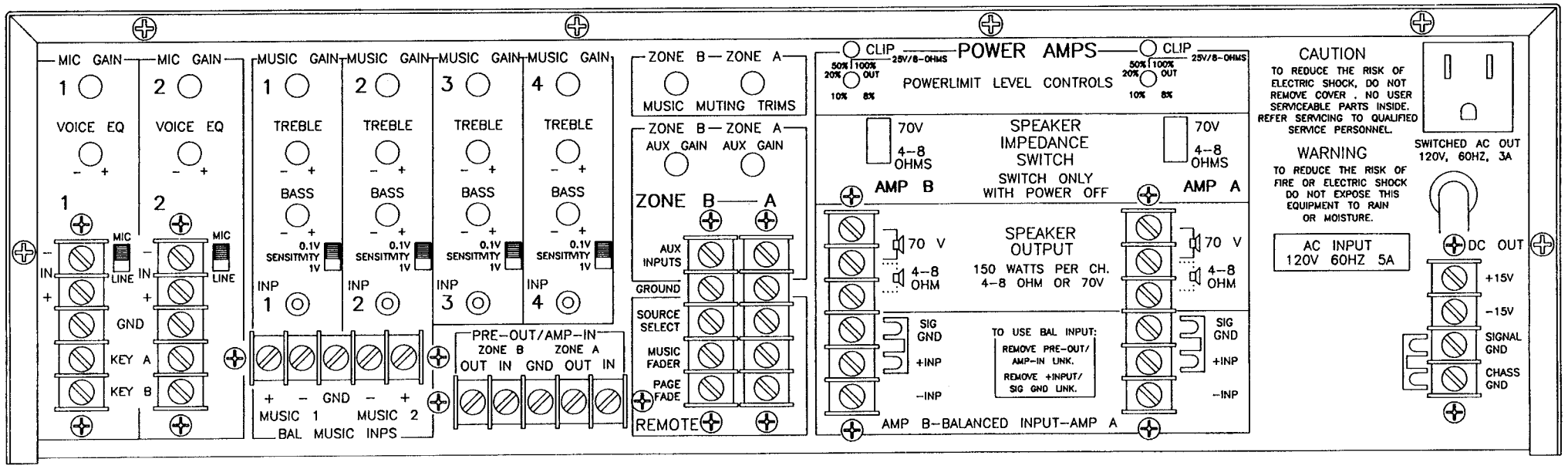
# of speakers _____

Type _____

Total Load _____

Output Voltage Switch Setting _____


MUSIC + PAGING SYSTEM
MASTER CONTROLS
MUSIC CONTROLS
PAGING CONTROLS
Ivie Technologies, Inc
MPS2300
OUTPUT
OUTPUT
MUSIC INPUT SIGNAL
1
2
3
4
MIC INPUT SIGNAL
1
2
TREBLE
TREBLE
BASS
BASS
MUSIC SOURCE ASSIGNMENT
OFF/REM
OFF/REM
1
2
3
4
MIC ASSIGNMENT
ZONE A
ZONE B
POWER
MASTER VOLUME
MASTER VOLUME
MUSIC VOLUME
PAGING VOLUME
0
10
ON/OFF
ZONE A
ZONE B
ZONE A
ZONE B
ZONE A
ZONE B


MIC GAIN
MIC GAIN
1
2
VOICE EQ
VOICE EQ
MIC
LINE
IN
GND
KEY A
KEY B
MUSIC GAIN
MUSIC GAIN
MUSIC GAIN
MUSIC GAIN
TREBLE
BASS
0.1V SENSITIVITY 1V
INP 1
INP 2
INP 3
INP 4
+ − GND − +
MUSIC 1
MUSIC 2
BAL MUSIC INPS
PRE-OUT/AMP-IN
ZONE B
ZONE A
OUT IN GND OUT IN
ZONE B — ZONE A
MUSIC MUTING TRIMS
AUX GAIN AUX GAIN
AUX INPUTS
GROUND
SOURCE SELECT
MUSIC FADER
PAGE FADE
REMOTE
CLIP
POWER AMPS
CLIP
50% 100% 20% OUT 10% 8% 25V/8-OHMS
POWERLIMIT LEVEL CONTROLS
70V 4-8 OHMS
SPEAKER IMPEDANCE SWITCH
SWITCH ONLY WITH POWER OFF
AMP B
AMP A
70 V
4-8 OHM
SPEAKER OUTPUT
150 WATTS PER CH. 4-8 OHM OR 70V
SIG GND
+INP
−INP
TO USE BAL INPUT:
REMOVE PRE-OUT/ AMP-IN LNK.
REMOVE +INPUT/ SIG GND LINK.
AMP B—BALANCED INPUT—AMP A
CAUTION
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER . NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.
AC INPUT 120V 60HZ 5A
SWITCHED AC OUT 120V, 60HZ, 3A
DC OUT
+15V
−15V
SIGNAL GND
CHASS GND