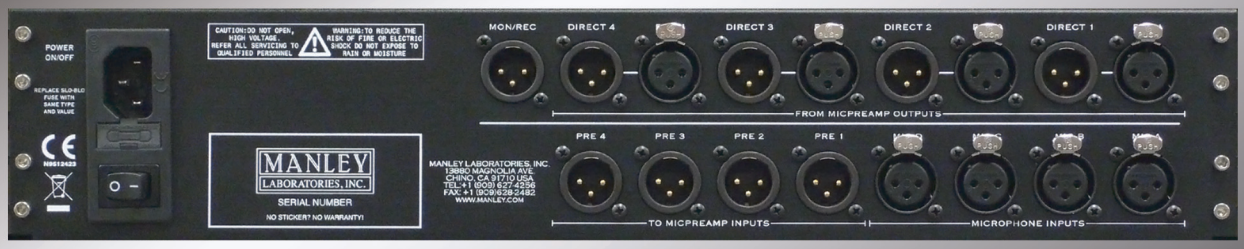
THE MANLEY
MICMAID
4x4 MATRIX SWITCHER
OWNER'S MANUAL



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MANLEY®
LABORATORIES, INC.

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INTRODUCTION

THANK YOU!...
...for purchasing the Manley MicMAID. This unit was designed to fill a particular niche in the business that has never really been addressed: auditioning and selecting microphones and microphone preamplifiers. Proper pairing of mics and preamps has always been (and always will be!) a vital step in the tracking process, but there has never been a simple, accurate way of doing this. Since we are in the business of providing tools to professional sound engineers, we saw this obstacle as an opportunity to flex our design muscles and create something that could finally fill this void.

In Ye Olden Tymes, when dinosaurs roamed the earth, records were made in studios. Big studios, with big consoles, with banks and banks of microphone preamplifiers. With a console full of micpreamps available, it was easy to audition several microphones through four almost identical preamps. In today's world, however, most people do not have this luxury. In a home studio, most people only own a few preamps and a few microphones. With a conventional patchbay, auditioning gear takes time - muting monitors, unplugging sources, repatching, adjusting gain for the new microphone or preamp - and in this time, our memory for the sound we just had a minute ago (or more) has faded. We might recall a general idea ("breathy", "boomy", etc.) but we don't REALLY remember precisely what we were hearing.

With the MicMAID, this problem is solved. Four mics are plugged in, four preamplifiers are plugged in, and that's it. Hear any mic through any pre, any way you like. For each of the four signal paths, levels are easily adjusted and saved - this level-matching fixes the all-too-common problem we encounter when we just assume the "louder" signal path is the "better" signal path. Subtle sonic differences between pieces of equipment are now instantly percievable, with a simplicity never previously available. This is important for more than just "knowing your gear" - it's a tool for use on EVERY session, so you know you're picking the ideal piece of equipment to get the sound you want.

In addition to the four main outputs the routing matrix provides, there is a fifth output labeled MON/REC on the rear panel. Although this is described as a "monitor" output, this output can (and should) be used for recording purposes - for it is only this output that utilises the active components of the MicMAID. These include the level-matching capabilities and, more importantly, the Variable Phase section of the unit. When the continuously variable phase circuit is selected, it allows you to easily phase-align the selected mic signal (or the front-panel DI signal) with another microphone. This phase adjustment has an all-pass filter with two selectable center frequencies, making it useful on a variety of sources.

With four passive hard-wired signal paths and its versatile monitoring section, we think the MicMAID can help you find the sound you're looking for faster and easier. It's a tool of the trade, and as with all tools, you should feel free to be creative and think up new ways to use it that make your life simpler and your recordings better.

MAINS CONNECTIONS

Your MicMAID has been factory set to the correct mains voltage for your country. The voltage setting is marked on the serial badge, located on the rear panel. Check that this complies with your local supply.

Export units for certain markets have a moulded mains plug fitted to comply with local requirements. If your unit does not have a plug fitted the coloured wires should be connected to the appropriate plug terminals in accordance with the following code:

GREEN/YELLOW	EARTH
BLUE	NEUTRAL
BROWN	LIVE

As the colours of the wires in the mains lead may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN/YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or coloured GREEN or GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked by the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked by the letter L or coloured RED.

DO NOT CONNECT/SWITCH ON THE MAINS SUPPLY UNTIL ALL OTHER CONNECTIONS HAVE BEEN MADE.

Note: This unit has been factory wired for your country. If you plan to take the unit to countries with a different mains voltage you will need to send the MicMAID to a qualified service technician, or contact the Manley Labs Service Center (email: service@manleylabs.com) for the correct transformer primaries wiring conversion. Alternatively, you may use outboard AC voltage step-up or step-down transformers as appropriate.

100V & 120V Operation: Uses a 1A SLO-BLO fuse.
220 & 240V Operation: Uses a 0.5A SLO-BLO fuse.
*****Fuses for ALL VOLTAGES are 5x20mm GDC packaged fuses.*****

Waste Electrical and Electronic Equipment (WEEE)

Information for customers:
The European Parliament and the Council of the European Union have issued the Waste Electrical and Electronic Equipment Directive. The purpose of the Directive is the prevention of waste of electrical and electronic equipment, and to promote the reuse and recycling and other forms of recovery of such waste. As such the Directive concerns producers, distributors and consumers.

The WEEE directive requires that both manufacturers and end-consumers dispose of electrical and electronic equipment and parts in an environmentally safe manner, and that equipment and waste are reused or recovered for their materials or energy. Electrical and electronic equipment and parts must not be disposed of with normal household wastage; all electrical and electronic equipment and parts must be collected and disposed of separately.

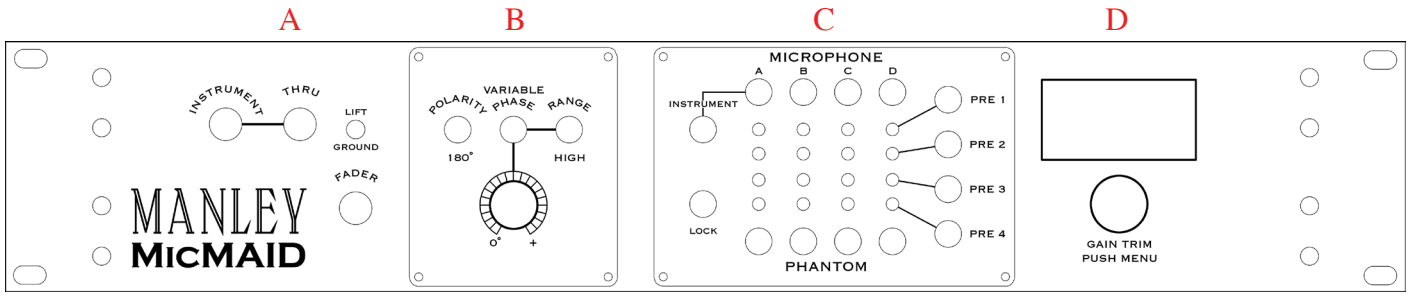
Products and equipment which must be collected for reuse, recycling and other forms of recovery are marked with the following pictogram:

Small products may not always be marked with this pictogram in which case this is present in the instructions for use, on the guarantee certificate and printed on the packaging.

When disposing of electrical and electronic equipment by use of the collection systems available in your country, you protect the environment, human health and contribute to the prudent and rational use of natural resources. Collecting electrical and electronic equipment and waste prevents the potential contamination of nature with the hazardous substances which may be present in electrical and electronic products and equipment.

Your MANLEY or LANGEVIN retailer will assist with and advise you of the correct way of disposal in your country.

THE FRONT PANEL



A. DIRECT INPUT

INSTRUMENT: 1/4" direct input for an unbalanced signal, i.e. electric guitar, bass

THRU: Direct (mirrored) output from the Instrument input.

LIFT/GROUND: Disconnects or connects the DI's circuit ground with the chassis ground.

FADER: 1/4" TRS jack for inserting a fader to control the MicMAID's MON/REC output level. (For more information, see page 9).

B. VARIABLE PHASE (only active for the MON/REC output)

POLARITY: When pressed, flips the selected signal path's polarity 180°.

VARIABLE PHASE: When pressed, the variable phase knob is switched into the circuit. This allows you to fine-tune the phase relationship between two of your mic signals, or between your direct signal and your mic signals.

RANGE: Pressing this moves the all-pass filter network to a higher center frequency. Generally, the "low" (unlit) position will work better on low-frequency material (bass guitar, kick drum), and the "high" (lit) position will work better on full-bandwidth material. This is a subjective choice, of course, and a choice that should always be made with your ears.

C. ROUTING MATRIX

MICROPHONE A/B/C/D: Selects which microphone is routed to the selected Pre.

PRE 1/2/3/4: Selects which preamplifier's output is sent to the MON/REC output.

INSTRUMENT: Substitutes the front panel transformer isolated instrument input for Microphone A.

LOCK: Locks the selected Microphone and Pre combination together. When a combination is locked, this button lights up red, and no other mic can be paired to the selected pre. Likewise, no other pre can be paired to the selected mic. This button will flash if an attempt is made to change a locked route - to "unlock" a route, press the Lock button again.

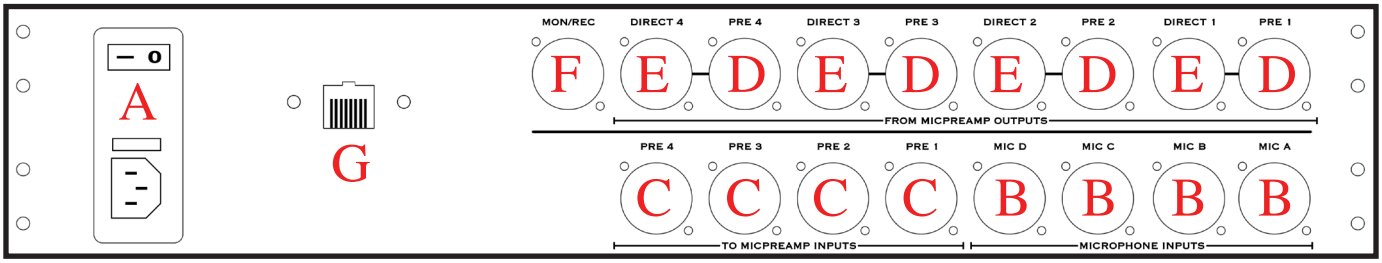
PHANTOM: Toggles phantom power to mics that require it. **Phantom power should never be turned on in a connected preamp.** See page 7 for details.

D. MONITOR SECTION

[DISPLAY]: Shows the level of gain trim for the selected signal path.

GAIN TRIM: Used to trim the gain of the selected signal path, or for menu functions like Recall. See pages 7 & 8 for more information.

THE BACK PANEL



A. *Power Switch:* Where the IEC power cable is inserted, the fuse is placed, and the power is switched off and on. Most users should be familiar with this feature set.

B. *Inputs from Microphones A, B, C, & D:* These are the inputs from each of your 4 microphones.

C. *Outputs to Microphone Preamplifiers 1, 2, 3 & 4:* These are the "sends" *to* each of your four micpreamps.

D. *Inputs from Microphone Preamplifiers 1, 2, 3 & 4:* These are the "returns" *from* each of your four micpreamps.

E. *Direct Outputs:* These outputs simply mirror the signals from the neighboring micpreamp returns. Think of each of these as direct outputs from each of your 4 micpreamps. Use them to go to your console, your mixer, your A/D converters, etc.

F. *MON/REC Output:* This is the output you hear when you are comparing mics to micpreamps through the Monitor Section. The GAIN TRIM knob and the VARIABLE PHASE section of the front panel are only useable via this output. All other outputs are passive. For more on the Monitor section, continue on to the next page.

G. *RJ-45 Connector:* Used to connect the MicMAID "pickle" remote. See page 9 for details.

THE ROUTING MATRIX

On the MicMAID, any of the 4 microphones can be connected to any of the 4 micpreamps. When the MicMaid is powered up for the first time, there are no routes between any mics and preamps.

To get started, select a microphone by pressing the assigned A, B, C or D button at the top of the routing matrix. For this example, let's say Microphone A. Now, select one of the 4 micpreamps on the right vertical side of the matrix - let's use PRE 1. Now, MIC A is hardwired to the input of PRE 1, and the output of PRE 1 is hardwired to the DIRECT 1 output on the back of the MicMAID - you can treat that output as the output of the micpreamp, as it simply mirrors it.

You can move on and select PRE 2, 3, and 4 in succession, and you'll be able to hear MIC A through all four preamps. Likewise, selecting each mic in turn will let you hear each mic through any and all preamps. Simple, right?

Now, let's say you find a match you really like ("MIC B sounds particularly lovely running through PRE 4!"). The LOCK button displays and controls the lock status of the currently selected microphone and preamp. Press this LOCK button, and you can toggle the lock status of the currently selected microphone and preamp. The LOCK button flashes if an attempt is made to change a locked route (e.g. trying to use a mic with a preamp that has already been locked to another microphone). To learn how to save your locked routings as "snapshots", see The Monitor Section below.

Phantom power to any of the four mic inputs can be supplied by the MicMAID. Hold the phantom button below the corresponding Microphone button (which will start flashing), and press that Microphone button to turn phantom on. Repeat to turn it off. **Phantom power should never be turned on in a connected preamp.** If the MicMAID detects phantom power from a connected preamp, the display will flash 'bP' (bad phantom) and the offending PRE button will blink until the external phantom power is removed. If a mic was routed to the offending pre, it will be muted and the route will be disconnected. The pre button for that channel will be disabled. The display will continue to flash 'bP' for a few seconds after the offending phantom power is removed while the circuit is stabilizing.

THE MONITOR SECTION

The monitor section uses the output of the currently selected preamp as its input. The GAIN TRIM knob can be used to trim the monitor section's gain by ±19.5 dB in 0.5 dB steps for each of the 16 microphone/micpreamp combinations.

In addition to these trims, you can also save up to ten "snapshot" memories of routing schemes you've set up via the instructions above. Snapshots remember the state of all gain trims and button controlled settings (most importantly, the routing matrix) except the phantom power settings. (These are not saved because improper application of phantom power could potentially damage some microphones). The first snapshot, number 0, is read-only: loading snapshot 0 returns the MicMAID to 'factory default' - no routes, no gain trims, no locks.

Pressing the rotary encoder knob activates the snapshot menu. While in the snapshot menu, think of pressing the rotary encoder knob as pressing "Enter" on a computer. When the menu first appears, all button and matrix leds turn off and the display shows ≡≡ . During menus the upper and lower half of the plus sign alternate. If no action is taken the menu will time out without any effect. Whenever stacked dashes ≡ are displayed, pressing Enter will exit the menu immediately without effect and without having to wait for the timeout.

(continued on next page)

THE MONITOR SECTION (cont'd)

Rotating the knob will cycle through the six menu choices:

'AS' - Add Snapshot
'LS' - Load Snapshot
'CS' - Clear Snapshot
'Pi' - Pickle inputs (Mics)
'Po' - Pickle outputs (Micpreamps)
'br' - Brightness

Pressing Enter when 'AS' is displayed changes the display to A≡. Rotating the knob will change the display to A1, A2, A3 … A9. These are the nine user snapshots. If a snapshot memory has been used, the decimal point to the left of A will be lit. This is just informational and doesn't prevent overwriting the saved snapshot. To save a snapshot, press Enter. If no action is taken, the menu will timeout without saving anything.

Pressing Enter when 'LS' is displayed changes the display to L≡. Rotating the knob will change the display to L0, L1, L2 … L9. These are the nine user snapshots, and L0 - the read-only reset snapshot. If a snapshot memory has been used, the decimal point to the left of L will be lit. Loading an empty snapshot will have the same effect as loading the reset snapshot. To load a snapshot, press Enter. If no action is taken, the menu will timeout without loading anything.

Pressing Enter when 'CS' is displayed changes the display to C≡. Rotating the knob will change the display to C-, and rotating once more changes it to CC (clear confirm). *This two-step process is used to minimize accidental snapshot deletion*. To delete all saved snapshots and mark all as empty, press Enter. If no action is taken, the menu will timeout without clearing anything.

Pressing Enter when 'Pi' is displayed changes the display to '.Pi'. The decimal point to the left of the P indicates that the current pickle mode is microphone. Any microphone inputs that will be stepped through by the pickle will be lit. Pressing a mic button will toggle inclusion in the list of mics to step through. If a mic input is locked to a preamp, that mic will not be available to include in the list. This menu will time out a few seconds after the last button press. Pressing Enter will exit the menu immediately.

Pressing Enter when 'Po' is displayed changes the display to '.Po'. The decimal point to the left of the P indicates that the current pickle mode is preamp. Any preamp outputs that will be stepped through by the pickle will be lit. Pressing a pre button will toggle inclusion in the list of pres to step through. Preamps that are locked to a mic are available for inclusion in the list. This menu will time out a few seconds after the last button press. Pressing Enter will exit the menu immediately.

Pressing Enter when 'br' is displayed displays 1, 2, or 3. This is the brightness level of the LEDs. A few button and matrix leds are lit up to serve as a sample to judge brightness. Rotating the knob will change the brightness level. To exit the menu press Enter or wait for the timeout.

****NOTE: When power is turned on, Snapshot 1 is automatically loaded. This makes it easy to return to a favorite setup. To make MicMAID power up with 'factory default' settings, load Snapshot 0, then save it as Snapshot 1. ****

DI & VARIABLE PHASE

The INSTRUMENT button substitutes the front panel transformer-isolated INSTRUMENT input for MICROPHONE A. This input might be very useful with the Variable Phase section...read on!

The Variable Phase section allows you to fine-tune the phase relationship between your Monitor Section signal (the MON/REC output) and the Routing Matrix Outputs. Engage the "PHASE" button above the knob in this section of the front panel, and the Variable Phase circuit is inserted in the Monitor Section. Turn this knob from 0° (fully CCW) to + (fully CW) to vary the Monitor Section's phase.

It is worth mentioning that if you are listening to ONLY the MON/REC output, little to no change may be audible - this feature is really only useful when listening *simultaneously* to both the MON/REC output and any of the other Routing Matrix Outputs, via your console/DAW. This allows you to combine two signals for the desired effects that overlapping phase provides.

THE FADER

Near the left-hand side of the front panel is a jack labeled FADER. This is a point where an outboard fader can be inserted into the signal path. A fader, if connected here, can be used to ride the output level of the Monitor Section. Think of this as your MON/REC output level control - immensely useful for riding the level of a vocal track live to tape, for instance...

The fader should be wired as follows:

T (tip) - Send to fader.
R (ring) - Return from fader.
S (sleeve) - Ground.

THE PICKLE REMOTE

The Pickle is a button in a small enclosure that might remind one of a small pickle, or perhaps a lavalier microphone from 1962, or maybe an XLR shell... The cable gets plugged into the RJ-45 jack on the rear panel of the MicMAID. *(CAUTION: RJ-45 jacks are also used in computers, telephone systems, and in other devices. Plugging any of these devices into your MicMAID will probably ruin everything, including your reputation.)*

The Pickle's function is to cycle through the microphones or the micpreamps connected to your Mic-MAID, and it lets you do so while sitting in your listening "sweet-spot". Refer to page 8 for details (in the "Monitor Section") on how to set up which of the units are included in the A/B'ing.

TROUBLESHOOTING

NO POWER, NO LIGHTS, NADA - Probably something to do with AC power. Is it plugged in? Is the mains voltage set correctly for your country? Also, check the fuse on the back panel. A blown fuse often looks blackened inside or the little wire inside looks broken. A very blackened fuse is a big hint that a Very Bad Thing occured. Try replacing the fuse with a good one of the same value and size. If it blows too then prepare to send the unit back to the dealer or factory for repair. The fuse is a protection device and it should blow if there is a problem. If the unit works with a new fuse, fine.

LIGHTS BUT NO SOUND - Make sure your microphones and micpreamps are connected through the proper XLR jacks. If a mic input is left open (or a micpreamp send/return is open), there will be no sound when that particular signal path is selected.

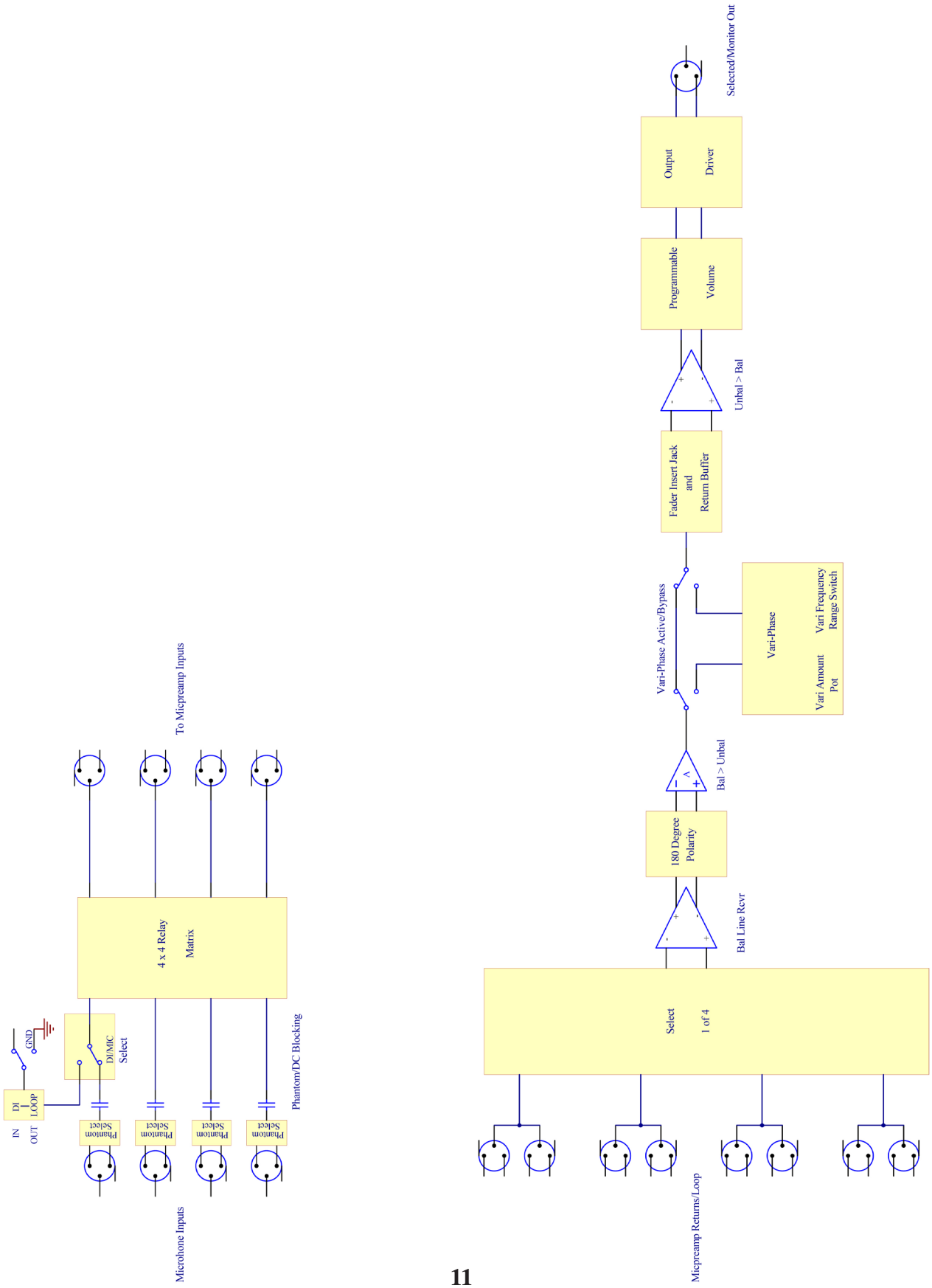
Does one or more of your microphones need phantom power? If the microphone needs it and the MicMAID is not providing it, there will be little or no audible signal. See page 5 for details on how to turn on the phantom power for each microphone. Remember - in the interest of your microphones' safety, "RECALL" in the menu system does not save phantom power, so you have to manually turn it on each time you use the MicMAID.

LEVELS SEEM TO BE WRONG, NO BOTTOM - Try different cables and check the path again. The "no-bottom" symptom often means the connection on Pin 2 or 3 is not really connected all the way through. Could also be a mismatch between a particular mic and a particular micpreamp, or a low-frequency rolloff filter on either piece of gear.

If you still have troubleshooting questions, feel free to contact Manley Tech Support:

service@manleylabs.com
(909) 627-4256 x325

BLOCK DIAGRAM



SPECIFICATIONS

Operation Voltage.....100/120/220/240VAC, 50 – 60 Hz
(main input voltage selectable internally via rewiring)

Current Draw.....Line in voltage 120VAC
Idle: 0.1 Amps / 12W; Max: 0.17 Amps / 20W

Mains Fuse.....Type: 5x20 mm glass body SLO-BLO
500mA (100/120VAC)
250mA (220/240VAC)

Instrument Input.....Input Impedance: ≈ 120K Ohms
Gain Ratio: 12:1 Step down.
Voltage Gain: -22 dB (Signal Source: Sine 1 kHz, +4dBu, 6k8 Source Impedance, 1K secondary load impedance)

ROUTING MATRIX

Matrix Crosstalk.....Leakage from adjacent microphone inputs:
≥ 117 dB (1 kHz sine)
Leakage from adjacent Preamp sends:
≥ 107 dB (1 kHz Sine).

Microphone Inputs terminated with source Z=150 Ohm, Preamps sends terminated with 2K7 Ohm load.

MONITOR/RECORD OUTPUT

Gain..... +/- 19.5 dB (.5 db steps)
Frequency response..... +/- .5 db 10 Hz- 100 kHz
XLR.....Electronically Balanced
Output impedance.....66 Ohms
Max output Level..... +28dbu into 100K load @ .025% THD+ NOISE
Distortion.....0.003% THD+NOISE
BW: 22 Hz - 22 kHz, Unity gain, into 100K load
Noise Floor..... -90dbu A-weighted
Dynamic Range.....118 db
CMMR..... ≥ 86 dB (1 kHz sine, 50mV input)

Note: Mon/Rec active stage ALWAYS "looks" at selected PREAMP as its signal source.