Ivie Technologies, Inc.

802A Manual

Operation and Owner's Manual for the

Model 802A

Automatic Mixer

Printed in U.S.A.

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Introduction

The Ivie 802A Automatic Microphone Mixer is flexible, powerful and innovative, yet is the most economical and simple to install automatic mixer Ivie has ever produced. In the design and development of the 802A, great emphasis was placed on simplicity of setup and ease of operation.

The 802A can be set up using the front and rear panel controls, or it may be set up via a computer. **Please note that a computer is NOT required at any time to either setup or operate the mixer**. Although not required, a computer can increase the mixer's power and versatility.

Once set up, the front and rear panel controls can be "locked" using an ANK-1 Audio Net™ key, or by using a computer loaded with Audio Net™ software connected to the 802A through an Ivie 78-232A, RS232 to RS485 converter.

Four Automatic Mic/Line Inputs

The 802A has four, automatic gating, transformer balanced inputs. These inputs are connected to a microprocessor which determines when a specific input should be gated, or turned on. Twelve dB of attenuation is applied to an input when it is gated off. Whenever an input is gated on, the 12dB of attenuation is removed. A standard NOM attenuation of 3dB per doubling of open microphones is applied whenever more than one microphone is gated on at a time.

Non-automatic Inputs

The mixer has two, electronically balanced, line level, non-gating inputs. These two inputs neither affect nor are affected by the NOM attenuator.

Internal Controls

There are only four internal controls in the mixer. Input channels 1 - 4 can be set for microphone level or line level input sensitivity. The mixer is shipped from the factory with these switches set to microphone level sensitivity.

To access these switches, loosen the four screws that retain the lid on the mixer and remove the lid. The switches are located on the printed circuit board. They are labeled "CHAN 1, CHAN 2, CHAN 3, and CHAN 4. There is a silk-screen label showing the positions for mic or line level sensitivity.

Rear Panel Controls

Input Switches for Channels 1 - 4

PH PWR - Phantom power on/off switch. In the ON position, +15Vdc of phantom power is applied to the input connector for the powering of condenser microphones. This switch should be

set to “ON” when using a microphone that requires phantom power. This switch should be in the “OFF” position when used with wireless microphone receivers.

14dB PD -14dB PAD. In the “OFF” position, the 14dB pad is not in the circuit and the gain through the input preamp is 55dB. Normally, this switch is set to the “OFF” position. Many microphones using phantom power have an output level that is much higher than that of a dynamic microphone. The 14dB pad switch should be set to the “ON” position when a high output level microphone is connected to the input.

HP FILT - High Pass Filter. This filter passes only higher frequencies by cutting, or rolling off, the lower frequencies. When the high pass filter switch is set to the “ON” position, the low frequencies are rolled off at the rate of 6dB per octave, beginning at 125Hz. This filter helps reduce low frequency noise generated by handling and breath popping.

AUX 1 to AUX OUT - This switch is used in conjunction with teleconferencing systems. Setting the switch to the “ON” position prevents the audio from the AUX 1 input from being mixed with the other inputs and sent to the AUX output (mix minus). If the output of a teleconferencing system were connected to the AUX 1 input, it would be desirable for that signal to appear on the main output so it could be heard in the room, but it would not be desirable to have it mixed with the microphone inputs and sent out the AUX output to feed the teleconferencing input. This would cause problems with feedback.

LAST ON - This controls the LAST ON feature of the mixer. Automatic mixers gate inputs on and off depending upon sound levels at the microphones. Typically, with no sound at any microphone input, all inputs would be gated off. The LAST ON feature allows the mixer to have at least one microphone gated on at all times. The last microphone that was gated on will remain on until another mic gates on to take its place.

There are several advantages to always having an open microphone in the room. When recording the output of the mixer, the LAST ON does away with the annoying sound of the room noise being gated on and off. It also keeps a mic gated on during pauses in a person’s speech so that there will not be any lost syllables as the mic gates off during a pause and then back on as speech begins again. The LAST ON feature is very important when the mixer is used in teleconferencing applications, especially when an active echo canceller is used.

Lock LED

This LED indicates whether or not the mixer is “LOCKED.” This LED is a duplicate of the front panel LED with the same label. When the LED is flashing, the mixer is locked; that is, its front and rear panel controls are disabled. When it is not flashing, the mixer is not locked. When the mixer is not locked, all front and rear panel controls (pots, switches, etc) are operational. Any adjustment to any of these controls affects the operation of the mixer.

Conversely, when the mixer is locked, the *adjustment of <u>any</u> front or rear panel control has NO effect upon the operation of the mixer.* The mixer can be locked and unlocked with an ANK-1 Audio Net™ key, Ivie’s special “electronic key,” or by a computer with Audio Net™ Software.

Automatic/Manual Switch

This switch selects an optional mode of operation when a remote control is connected to the 802A.

The 802A can detect when a remote control is connected to the mixer. If the Automatic/Manual switch is set to "Automatic," the mixer mixer will continue to automatically gate the inputs on and off when the remote control is connected. Conversely, if the Automatic/Manual switch is set to "Manual," an input connected to a remote control will operate in a manual mode; that is, it will be gated on all the time. When the remote control is disconnected, automatic operation will be resumed.

Aux Output Level

This rear panel control is adjusted with a small screwdriver. It controls the output level of the Auxiliary output.

Rear Panel Connections

Input Connections Channels 1 - 4

These four inputs are transformer balanced and can accept either microphone or line levels. They will also accept unbalanced input signals. A slide switch located inside the mixer sets the input for either mic level or line level input signals. As shipped from the factory, the inputs of the 802A are set for mic level.

Microphone Level Inputs

The four microphone inputs are designed to accept standard, balanced, low impedance microphones (50 - 600 Ω). These inputs will work well with both dynamic and condenser microphones. If a condenser microphone is used, the phantom power for that input may need to be turned on. Also, condenser mics can have a higher level output than a dynamic microphone, so switching in the 14dB pad may be desirable when using a condenser mic.

Line Level Inputs

When the internal mic/line slide switch is set to line level, the input can accept line level signals. Selecting line level on an input adds 50dB of attenuation to the front of that input. When in the line level position, an input is transformer balanced with an input impedance of 30kΩ. *The phantom power should be turned off when an input is configured for line level.*

The Two Aux Inputs, and the Main and Aux Output

Aux inputs 1 and 2 are electronically balanced, line level inputs with an input impedance of 82kΩ balanced, and 41k Ω unbalanced. The level of Aux input 1 is controlled by the front panel, Aux Level Control. The level of Aux input #2 is fixed at 10dB of gain. This input is designed to work with outputs that can supply a level of 0.3Vrms (-10dBV). The maximum level connected to this input should not exceed +10dBV.

The Main and Aux outputs are both transformer balanced outputs.

Front Panel Controls

All of the front panel controls of the mixer can be remoted. All that is required is a standard, 10kΩ pot which is connected to the remote control terminals on the rear panel of the 802A. One 10kΩ pot controls one channel. Ivie Technologies manufactures a complete remote control, the model RMA-6, that can be used with the 802A, or individual remote controls can be connected to only those channels requiring remote control. The Ivie Technologies RM-1 and RM-2 pushbutton remote controls can also be used with the 802A.

A connection diagram for the remote controls can be found on the inside, rear cover of this manual.

Audio Net™ Terminals

The Audio Net™ terminals on the rear of an 802A Automixer are connected in parallel with the front panel Audio Net™ connectors. Either Audio Net™ connector allows access to the mixer. The rear panel terminals are normally used to connect the mixer to other Audio Net™ units on the network. Linking units is a simple matter of paralleling all the rear panel Audio Net™ terminals together. Two-conductor, shielded cable should be used. *The shield of that cable should be connected to ground on only one unit.* The purpose of the shield is to shield the data line from radiating. It is not part of the signal path.

Figure 1 below shows how several Audio Net™ units are linked:

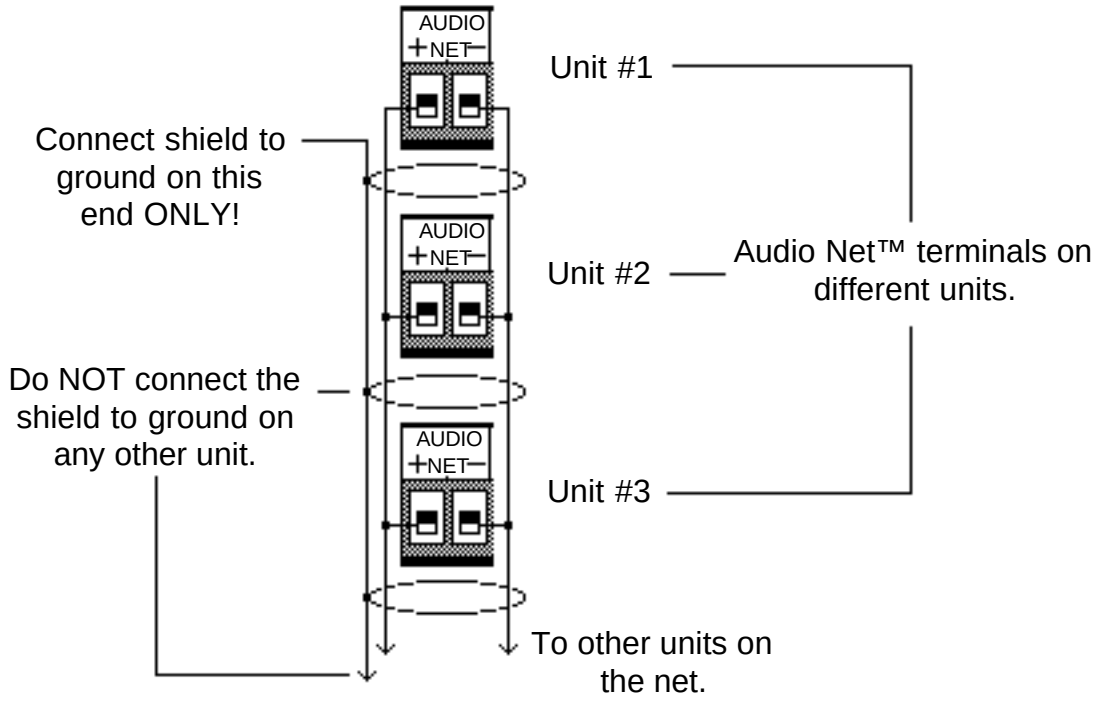

Figure 1

Ground Link Terminals

As shown in the diagram on the inside, rear cover of this manual, there are two ground terminals on the rear of the mixer, an Audio ground and a Chassis ground. There is a link jumper connecting these two grounds together. This is the normal configuration.

The power supply for the mixer has a 3 prong, grounded, AC power plug. *The ground prong on AC power plug should never be "lifted" or isolated from ground.* Should the mixer need to be isolated from ground, the ground link can be removed. Normally, the Audio ground terminal is then "referenced" (connected) to another ground point somewhere in the system.

If there are multiple mixers or other Audio Net™ products in the system, a "Star ground" should be used. A star ground will help reduce overall system noise and will also help reduce ground loops. An example of star grounding is shown on the inside, rear cover of this manual.

DC Pwr In

Connect the supplied UL®, CSA® approved power supply to this connector. The power supply provides ±15Vdc and +5Vdc to the mixer.

Setting Up the Mixer

The 802A is very easy to install and set up. There are no gain trim or threshold controls to be set. The automatic mixer portion of the mixer is set by adjusting the channel level controls as would be done for normal mixer operation. The following procedure should be used:

1. Set up each input for the configuration needed: Mic or line level, phantom power, pad in/out etc.
2. Set all unused inputs to $-\infty$ (fully counter-clockwise).

3. Set all of the microphone channels that are being used to the +5 position on the front panel. This is for a normal dynamic microphone (14dB pad off), or for a condenser microphone (14dB pad on). When using microphones of the same type, the input level controls should be set to approximately the same level. If different types of microphones are used, lower sensitivity mics may need to have their gain increased, while higher sensitivity mics may need to have their gain decreased.

4. With the LAST ON feature activated (set to on), speak into a microphone and adjust the Master Output level so that it is just below the level of feedback.

5. One at a time, speak into all the other microphones and adjust their individual input controls to the desired level.

6. Adjust Aux inputs as desired.

Specifications

Input channels 1-4: Transformer, balanced and isolated. Switchable between microphone or line input levels. Microphone input impedance: 1200 Ω. Compatible with microphone sources of 600Ω or less. Line input impedance: 30k Ω.
Low cut filter: ---------- 6dB/octave, -3dB @ 100Hz
Noise: ---------- (EIN 20Hz to 20kHz) -125dBV (200Ω source)
Sensitivity: ---------- 0.4mv in for +18dBm out
Input Overload: --------- -9dBV (with 14 dB pad enabled).
Phantom power : ------- +15Vdc

Auxiliary Inputs:
Input impedance: ------- 20k Ω
Input level: ---------- -10dBV recommended

Outputs: ---------- Balanced, transformer isolated.
Output impedance: ----- 110 Ω
Recommended Load Z: 600 Ω or greater.
Output level: ---------- +18dBm

Size: ---------- 19" W x 1 3/4" H X 8 1/4" D (48.3 cm x 4.5 cm x 21 cm)
Weight: ---------- 10 Pounds with external power supply
Shipping Weight: ----- 13 Pounds

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