AVIOM®

A360
Personal Mixer

User Guide

PRO 16®   PRO 16e®   A·NET®

READ THIS FIRST

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. No on/off power switches are included in the system. The external power supply should be used to control power to an Aviom device. This power supply should remain readily operable.
16. The solid line over dashed line symbol (⎓) indicates that the input voltage must be a DC voltage.
17. The box within a box symbol (▣) indicates that the external power supply is double insulated.

WARNING!

TO REDUCE THE DANGER OF ELECTRICAL SHOCK DO NOT REMOVE COVERS.

NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

To reduce the risk of fire or electrical shock, do not expose this product to rain or other types of moisture.

To avoid the hazard of electrical shock, do not handle the power cord with wet hands.

Replace fuse with same type and rating.

Operating Temperature: 0˚C to 50˚C (32˚F to 122˚F)

Risque de choc électrique – ne pas ouvrir. Pour réduire le risque de feu ou de choc électrique, ne pas exposer cet équipement à la pluie ou la moisissure. Pour réduire le risque de choc électrique, ne pas retirer le couvercle. Pièces non remplaçables par l'utilisateur. Confier la réparation à une personne qualifiée. Attention – utiliser seulement un fusible de rechange de même type.

Cet appareil est conforme à la section 15 de la norme FCC. Son fonctionnement est soumis aux conditions suivantes : (1) cet équipement ne doit pas causer des interférences nocives, et (2) cet équipement doit accepter toute interférence captée incluant les interférences pouvant causer des opérations indésirables.

Cet appareil numérique de Classe B est conforme à la norme NMB-003 du Canada.

IMPORTANT:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to the product not expressly approved by Aviom, Inc. could void the user's FCC authority to operate the equipment.

CAUTION:

- Using any audio system at high volume levels can cause permanent damage to your hearing.
- Set your system volume as low as possible.
- Avoid prolonged exposure to excessive sound pressure levels.

Certifications

EMC: EN55103-1:2009
EN 55103-2: 2009
EN 55022:2006 / CISPR 22:1997
CAN/CSA-CEI/IEC CISPR 22:02
FCC 47 CFR, Part 15

Safety: UL 60065, 7th Edition, Rev.: 09/21/2012;
CAN/CSAC22.2 No. 60065:03 (R2012)

ETL/cETL Listed and RoHS Compliant

Notice of Rights

Trademarks

Aviom, A Net, the A Net icon, Pro16, Pro16e, Pro64, One-Touch Ambience, Dual Profile Channel, Enhance, Stereo Placement, and Network Mix Back are trademarks of Aviom, Inc. All other trademarks are the property of their respective owners.

Information is subject to change without notice.

Aviom, Inc. Limited Warranty

Aviom, Inc. warrants this product against defects in materials and workmanship for a period of **one year** from the date of the original retail purchase.

This warranty does not apply if the equipment has been damaged due to misuse, abuse, accident, or problems with electrical power. The warranty also does not apply if the product has been opened or modified in any way; if the product serial number has been damaged, modified, or removed; or if the original Quality Assurance label has been damaged, modified, or removed.

If a defect is discovered, first write or call Aviom, Inc. to obtain a Return Authorization number. No service will be performed on any product returned without prior authorization. Aviom, Inc. will, at its option, repair or replace the product at no charge to you. The product must be returned during the warranty period, with transportation charges prepaid to Aviom, Inc., 1157 Phoenixville Pike, Suite 201, West Chester, PA 19380. You must use the product's original packing materials for shipment. Shipments should be insured for the value of the product. Include your name, address, phone number, description of the problem, and copy of the original bill of sale with the shipment. The Return Authorization number should be written on the outside of the box.

THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE (OR JURISDICTION TO JURISDICTION). AVIOM'S RESPONSIBILITY FOR MALFUNCTIONS AND DEFECTS IN HARDWARE IS LIMITED TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS LIMITED WARRANTY STATEMENT. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE WARRANTY PERIOD SET FORTH ABOVE. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER SUCH PERIOD.

AVIOM, INC. DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY DOCUMENT. AVIOM, INC.'S LIABILITY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT OUR OPTION, OF ANY DEFECTIVE PRODUCT, AND SHALL IN NO EVENT INCLUDE INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

SOME STATES DO NOT ALLOW EXCLUSIONS OR LIMITATION OF IMPLIED WARRANTIES OR LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Warranty Information

Please record the following information for future reference:

Your Authorized Aviom Dealer:

Name: _____

Address: _____

_____

_____

Phone: _____

Serial Numbers of Your Aviom Products: _____

_____

_____

Date of Purchase: _____

Your Authorized Aviom Dealer is your primary source for service and support. The information recorded above will be helpful in communicating with your Authorized Aviom Dealer should you need to contact Aviom Customer Service. If you have any questions concerning the use of this unit, please contact your Authorized Aviom Dealer first. For additional technical support, or to find the name of the nearest Authorized Aviom Repair Station, check the Aviom web site at www.aviom.com.

To fulfill warranty requirements, your Aviom product should be serviced only at an authorized Aviom service center. The Aviom serial number label must appear on the outside of the unit, or the Aviom warranty is void.

This manual and its contents are copyrighted by Aviom, Inc. All rights are reserved by Aviom, Inc. This document may not, in whole or in part, be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form without prior written consent from Aviom, Inc.

The software and/or firmware contained within Aviom products is copyrighted and all rights are reserved by Aviom, Inc.

Although every effort has been made to ensure the accuracy of the text and illustrations in this manual, no guarantee is made or implied as to the accuracy of the information contained within.
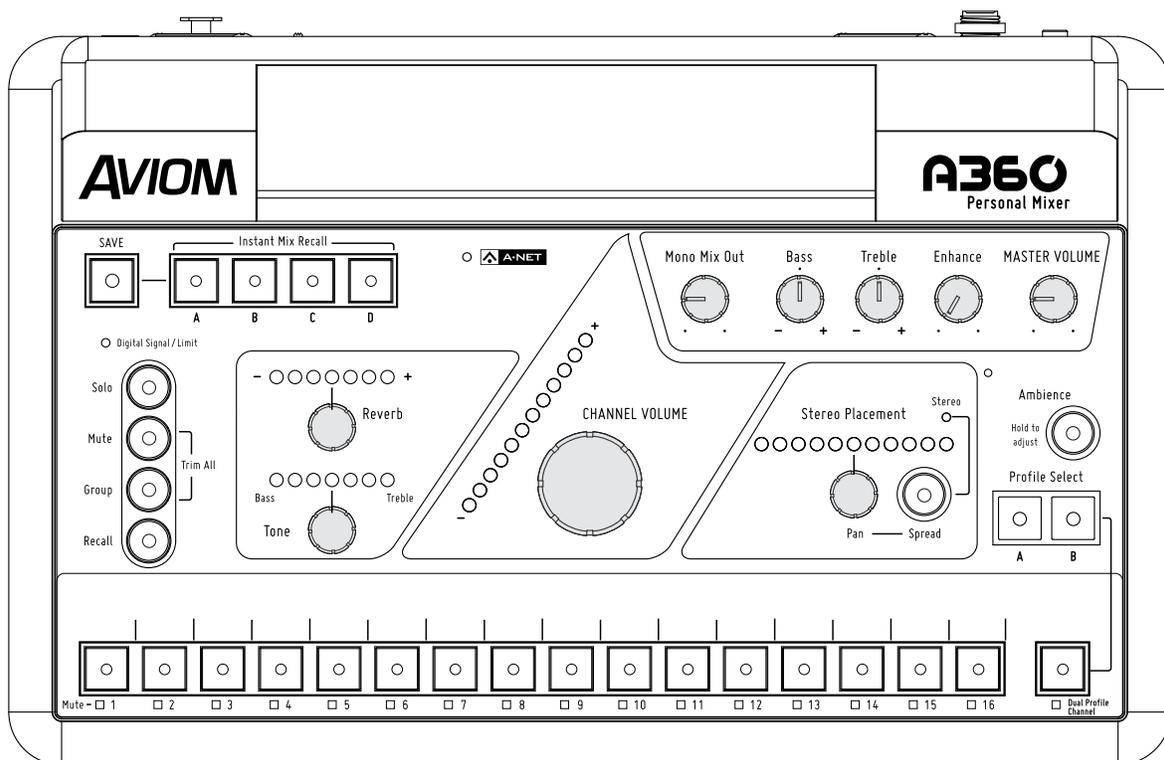
Table of Contents

A360 Personal Mixer

*Thank you for purchasing the Aviom **A360 Personal Mixer**. This User Guide is designed to familiarize you with your new product's features and to have your personal mixing system up and running as quickly as possible.*

Feature Overview

The A360 Personal Mixer is part of Aviom's Pro16® Series of products; it can be combined with Pro16® and Pro16e™ analog input devices, console cards, and/or the Pro64® ASI A-Net® Systems Interface to create personal mixing systems for applications in live performance, recording, and broadcast.

The A360 Personal Mixer features:

- Advanced 36-channel mix engine
- Programmable channel selection and layout from a 64-channel network
- 16 mono or stereo standard mix channels
- Dual Profile Channel™
- Advanced Stereo Placement controls for improved sonic clarity
- Per-channel volume, tone, reverb, and Pan-Spread™
- Three-band master tone controls with Enhance™, optimized for in-ear monitors
- One-Touch Ambience™ control using onboard mic or network audio channels
- 20 Mix Presets including 4 Instant Mix Recall™ presets
- USB storage for saving and loading mixer configurations
- Seamless integration with existing Aviom personal mixing systems

Conventions Used in this Document

Using Personal Mixers

When referring to the use of the Personal Mixers in a personal mixing system in general, the term **Personal Mixer** is used to describe a case where an A360 Personal Mixer, A320 Personal Mixer, A-16II Personal Mixer, or an A-16R Rack-mount Personal Mixer (with or without the optional A-16CS Control Surface) can be used.

Cat-5 Cables

In most cases unshielded Cat-5e, Cat-6, and Cat-6e UTP (Unshielded Twisted Pair) cables can be interchanged. When speaking about interconnections between components in a system, the term **Cat-5** is used generically to indicate the use of any of the applicable cable types.

A-Net Distributors

The D800, D800-Dante, D400, D400-Dante, A-16D and A-16D Pro A-Net Distributors are referred to generically as **A-Net Distributors**. Both are used to copy an A-Net digital signal and split it into multiple copies so that devices may be connected in parallel.

Button Presses

When instructed to press a specific button on the A360 Personal Mixer, a special font style is used. For example, "Press the **Solo** button."

Package Contents

The A360 Personal Mixer box includes:
- One A360 Personal Mixer
- Documentation

Options for your personal mixing system include:
- Cat-5e/Cat-6 UTP interconnect cables
- MT-1 or MT-1a Mic Stand Mount
- PS-120 Power Supply
- D800, D400, A-16D, or A-16D Pro A-Net Distributors
- A360 Channel Manager software, available free from the Aviom website

Also included with the system is a Warranty Registration, found within this User Guide. Be sure to fill out the form and return it to Aviom, Inc. via mail or fax as soon as possible.

About A-Net

A-Net® is a proprietary high-speed data transmission protocol developed by Aviom, capable of sending and receiving high-quality digital audio using readily available Cat-5 cables.

A-Net is based on the physical layer of Ethernet, a Local Area Network (or LAN) technology. This provides A-Net with a mature and robust base on which to build. However, it is important to note that A-Net devices are not compatible with Ethernet devices.

Some of the benefits of using A-Net to transmit digital audio are:
- Virtually no latency; analog in to analog out is always less than one millisecond
- No ground loops
- Easy cabling using readily available components
- An unlimited number of A-Net devices can be used in a system
- Ease in spanning long distances between system components

There are two versions of Pro16 A-Net: the original Pro16 A-Net signal carries sixteen channels of digital data while the enhanced Pro16e® version of A-Net is capable of carrying up to 64 channels of digital audio data. Like standard Pro16 A-Net, Pro16e is a point-to-point digital audio protocol.

Pro16e A-Net data is intended for use with the A360 Personal Mixer which can take advantage of the higher network channel count that Pro16e provides.

Compatibility

The A360 Personal Mixer is compatible with Pro16, Pro16e, and Pro64 A-Net devices as detailed below.

Pro16 Products

The **A-NET OUT** from the following Pro16 devices may be connected to the A360 Personal Mixer's **A-NET IN** port:

- AN-16/i v.2 Input Module
- AN-16/i Input Module
- AN-16/i-M Mic Input Module
- AV-M8 Mic Input Module
- Aviom16/o-Y1 A-Net Card for Yamaha® devices
- A-16D and A-16D Pro A-Net Distributors
- D800 and D800-Dante A-Net Distributors
- D400 and D400-Dante A-Net Distributors
- A-16II Personal Mixer
- A-16R Rack-mount Personal Mixer
- AN-16/o Output Module
- AV-P2 Output Module
- Third-Party Pro16 A-Net digital console cards

Pro64 Products

Adding the ASI A-Net Systems Interface to a Pro64® digital snake or audio network allows Pro64 channels to be translated into Pro16 data. The ASI separates the 64-channel Pro64 stream into up to four 16-channel Pro16 outputs, depending on the Pro64 sample rate being used. Any of the four Pro16 A-Net outputs from the ASI may be connected to the A-Net In on the A360 Personal Mixer either directly or by adding an A-Net distributor to the signal path between the ASI and A360.

The ASI's Pro16 A-Net outputs can also be connected to the A-Net In on the AN-16/i v.2 Input Module when creating a personal mixing system that uses the enhanced Pro16e version of A-Net for increased channel count.

About Category 5

The term Category 5 (also referred to as *Cat-5*) is broadly used to describe a type of high performance network cabling used for data transmission purposes to connect computer networks and other devices. A standard patch cable consists of four twisted pairs of copper wire terminated by RJ45 male connectors. The cable assembly is used to provide connectivity between any two Cat-5 female RJ45 jacks.

A variation of the cable, called Category 5e (or Cat-5e), has largely replaced Cat-5 in the field; it uses additional twists in the cable's wire pairs to reduce interference in high-speed network applications. Additional wire pair variations are found in Cat-6 and Cat-6e cables, typically used with gigabit networking devices. **Use Unshielded Twisted Pair (UTP) cables for all A-Net applications.**
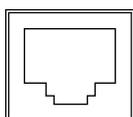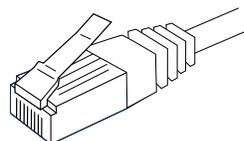
RJ45 Jack   Cat-5e Cable

✓ **NOTE:** While the Cat-5e cables and connectors used on your Aviom products look like typical computer Ethernet network connections, do not connect computers, routers, or other home and business networking equipment to your Aviom products.

Cat-5e Cables

Any standard Cat-5e UTP cable may be used with your Aviom products. If you need a longer cable for a particular application, any computer store should be able to supply you with an appropriate cable. A qualified technician should be able to build custom cables to any length.

For fixed or permanent installations, you have the option of running Cat-5e cables inside walls and terminating them with readily available wall panel connectors that include the RJ45 jack. (Solid wire is recommended for permanent installations.)
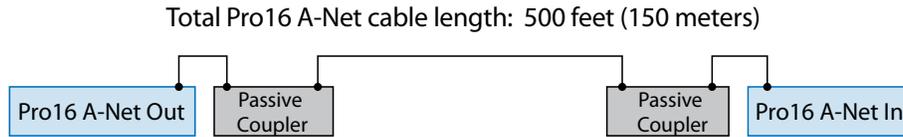
In addition to standard Category 5e cables, Cat-6 and Cat-6e cables may also be used.

✓ **NOTE:** When purchasing Category 5e cables, be sure to buy only standard Cat-5e UTP cables, not those sold as crossover cables. A crossover cable is used for file transfer between two computers and is not compatible with your Aviom equipment.
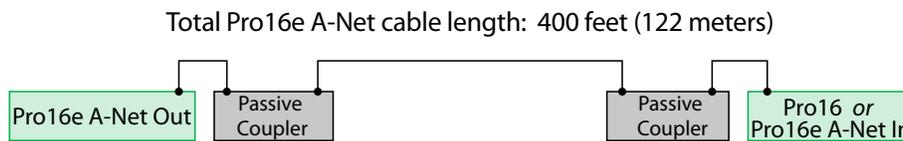
Cat-5 cables outfitted with the heavy-duty Neutrik EtherCon® connector may also be used in addition to those that use the standard RJ45 cable connector.

Cable Lengths

For Pro16 applications—connecting one **Pro16** device to another—the Cat-5e cables used with your Aviom products may be up to 500 feet (approximately 150 meters) in length between devices. For example, connecting an AN-16/i-M Mic Input Module to an AN-16/o Output Module is a Pro16-to-Pro16 connection.

Total Pro16 A-Net cable length: 500 feet (150 meters)

| Pro16 A-Net Out | Passive Coupler | | Passive Coupler | Pro16 A-Net In |

When using **Pro16e**—such as the A-Net Out from an AN-16/i v.2 to *any other* Pro16 or Pro16e device—Cat-5e cables may be up to 400 feet (approximately 122 meters) in length between compatible devices due to the larger amount of data being transmitted to accommodate Pro16e's higher channel count.

Total Pro16e A-Net cable length: 400 feet (122 meters)

| Pro16e A-Net Out | Passive Coupler | | Passive Coupler | Pro16 *or* Pro16e A-Net In |

The maximum cable length specification applies to the total cable length between an **A-Net Out** port on one device and the **A-Net In** port on the next A-Net capable device in your system.

Your cable length performance will be affected by a number of factors including the quality of the cables used, and the number of passive devices such as cable couplers or passive wall panel interconnections in use.

Stranded or solid Cat-5e cable may be used; stranded cable is easier to deploy on a stage while solid core cable provides slightly better maximum distance performance. Solid core wire is typically used in permanent installations in walls and across ceilings.

When using the optional AN-16SBR or SB4 System Bridge with Pro16 and Pro16e devices, the cable length specification applies to the *total* cable length between the two active A-Net devices being connected with the passive AN-16SBR System Bridge, plus all cables. This is also true when using a passive inline coupler to extend cable lengths.

Pre-made cables in a variety of lengths and colors are available at most computer outlets. Cables may be extended by using a simple passive device called an *inline coupler* to add length to existing cables (as long as you do not exceed the specified maximum cable length). If you need a longer cable on occasion, this is a simple solution. Note that the maximum cable length performance can be compromised by using inline couplers or other passive connection devices.

AC Line Conditioning

Aviom products are digital devices and as such are sensitive to sudden spikes and drops in the AC line voltage. Changes in the line voltage from lightning, power outages, etc. can sometimes damage electronic equipment.

To minimize the chance of damage to your equipment from sudden changes in the AC line voltage, you may want to plug your equipment into a power source that has surge and spike protection. Power outlet strips are available with built-in surge protection circuits that may help protect your equipment.

Other options for protection of your equipment include the use of an AC line conditioner or a battery backup system (sometimes referred to as an *uninterruptible power supply*, or UPS).

Power Supplies

The A360 Personal Mixer is intended to be connected to an A-Net Distributor such as the D800 or D400 when creating a personal mixing system. A-Net Distributors provide both parallel A-Net connections for up to eight devices as well as the DC power required to run them.

The A360 can also be powered with an optional DC power supply, the PS-120, which is a universal switching type supply capable of working with voltages from 90 to 240 volts AC.

Should you need to add or replace a power supply, we recommend using only a power supply that meets the following specifications.

Type	Switching	
Input Voltage	90-240 volts	50/60Hz 30VA
Output	24Vdc	0.5A
Polarity	Outer = negative; Inner = positive	
Plug Size	2 mm	

Note that the polarity of the plug found on the DC power supply needs to match that of the power supply specified to work with your Aviom equipment. Aviom products use a center positive power supply. The outer contact is negative, the inner contact is positive.

Power Supply Polarity

Cleaning and Maintenance Information

The exterior of your Aviom products should be cleaned with a dry, soft, lint-free cloth. For tougher dirt, you can use a cloth slightly dampened with water or with a mild detergent.

When cleaning your Aviom products, never spray cleaners directly onto the product surfaces. Instead, spray a small amount of the cleaning solution onto a clean cloth first. Then use the dampened cloth to clean the product.

✓ **Note:** Never use solvents or abrasive cleaners on the finished surfaces of your Aviom products.

A360 Front Panel

Mix Channels

	Function
1	Channel Label Strip
2	Channel Buttons with LED – green
3	Channel Mute LEDs – yellow
4	Dual Profile Channel™ Button
5	Profile Select Buttons for the Dual Profile Channel
6	One-Touch Ambience™ Button and Built-in Ambience Mic

Channel Label Strip

The channel label strip is designed to accept 1/2-inch (13 mm) wide artist's tape or custom-made labels. A spreadsheet style channel label template is available on the Aviom website. A sample appears on page 71. Do not use permanent adhesives or tapes with your Aviom product.

Mix Channel Buttons

The 16 standard mix channel buttons can hold either a mono or stereo source (stereo links are assigned at the Pro16 or Pro16e input device with the stereo link switches). To select a channel and make it active for editing, press one of the 16 mix channel buttons; its green LED will light. Make channel-level changes as needed using the Reverb, Tone, Channel Volume, Pan, Spread (stereo channels only), and Mute controls. While editing, the Solo function is also available to isolate the selected channel from the mix. See page 27 for information about using Solo.

When connected to a Pro16e source with the A360 rear-panel mode switch set to DEFAULT or CUSTOM, stereo input sources are mapped to a single mix channel button. When a stereo channel is selected, the yellow STEREO LED in the Stereo Placement section of the interface lights and the Stereo Placement controls can be switched between PAN and SPREAD.
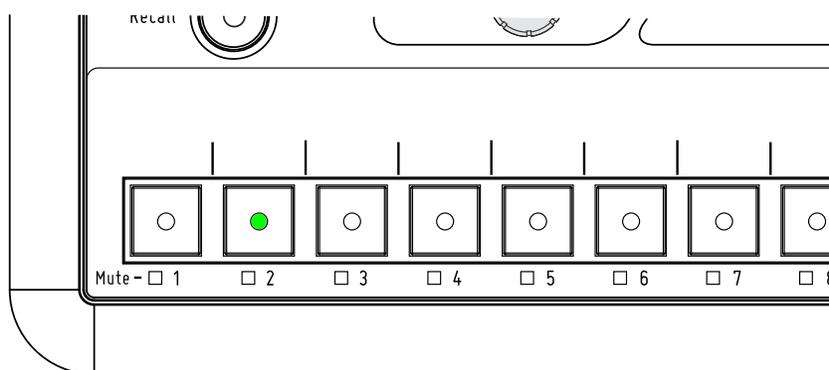
Channel 2 is selected.

When used with a single 16-channel Pro16 A-Net input device or when the A360 rear-panel mode switch is set to PRO16, a stereo source will be mapped to two adjacent channel buttons (in odd-even pairs). Pressing either channel button will light both buttons, and the stereo channel pair may be edited using the Reverb, Tone, Channel Volume and Pan/Spread controls.

The 16 mix channel buttons also double as Mix Preset storage locations. See page 38 for information on saving and recalling Mix Presets.
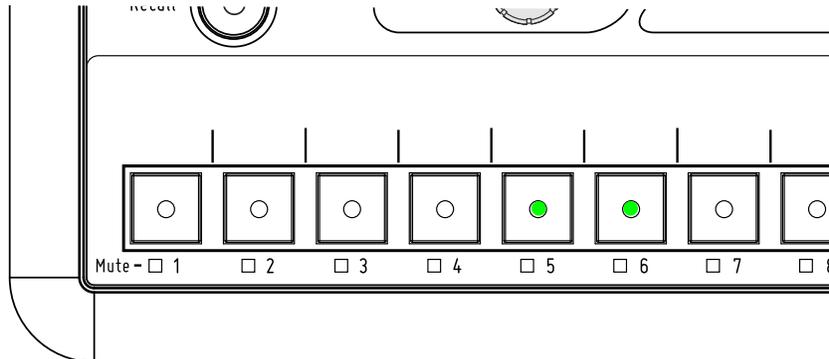
Channel 5-6 are stereo linked at a Pro16 input device; the rear panel mode switch is set to Pro16.

Channel Mute LEDs

Each standard mix channel plus the Dual Profile Channel has a Mute LED below its channel select button. The yellow Mute LED indicates that a channel is muted in the current mix. To mute the selected channel, removing it from the current mix, press the **MUTE** button; the Mute LED below the channel button will light. To unmute a channel, select the channel first (its green LED will light) and then press the **MUTE** button. The channel can be heard again in the mix. While muted, a channel's Reverb, Tone, Volume, Pan, and Spread (if stereo) can still be edited.
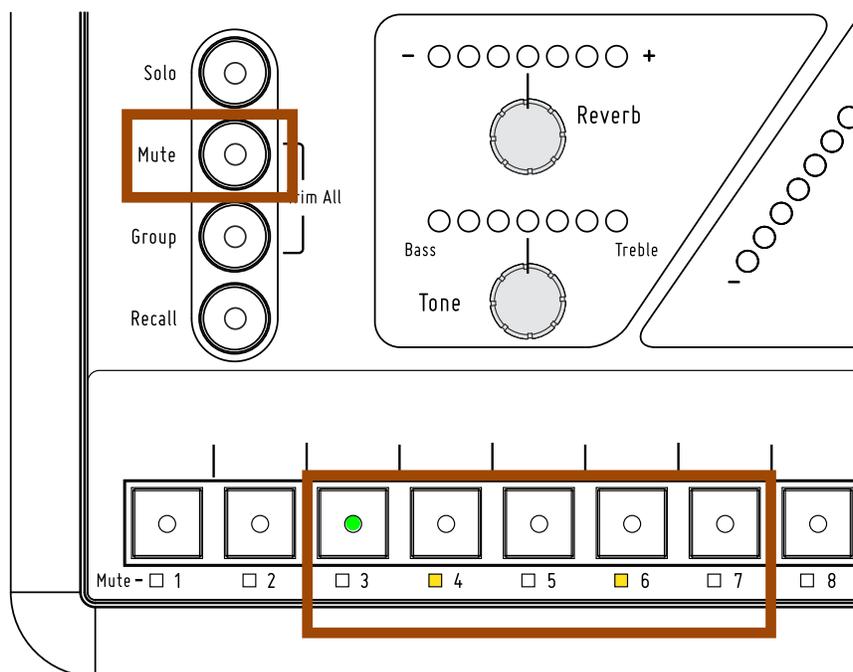
Channels 4 and 6 are already muted. Channel 3 is selected; press the round Mute button to mute it.

Any number of mix channels may be muted while making a mix. Channel mutes are saved when a Mix Preset is created.

✓ **Tɪᴘ:** To quickly mute all mix channels temporarily, double-click the **Mᴜᴛᴇ** button. The yellow LED in the Mute button and those under the channel buttons will blink. Press the **Mᴜᴛᴇ** button again to return to normal operation. The Ambience channel is not affected, allowing the onboard mic to be used. Channels that were muted in the mix prior to using the temporary Mute All function will still be muted once the Personal Mixer is returned to its normal mix state.

Dual Profile Channel

The Dual Profile Channel™ is a powerful feature that can be set up in two different ways. First, the Dual Profile Channel can mirror one of the 16 mix channel buttons, allowing a performer to make a shortcut to a favorite or important channel in an easy-to-reach position on the A360 Personal Mixer. Second, when the A360 mode switch is set to **Cᴜsᴛᴏᴍ**, the Dual Profile Channel may be assigned as a 17th mono or stereo mix channel using the A360 Channel Manager software. See page 45 for information about the rear-panel mode switch and its operation.

As its name implies, the Dual Profile Channel has two independent groups of channel-level settings— Reverb, Tone, Channel Volume, and Pan/Spread—stored as two Profiles, labeled **A** and **B**. This allows a performer to store the settings for two different performance situations and recall them with a single button press without affecting anything else in the current mix. It's like a mini preset for a single channel.

For example, a singer may want to save different settings for ensemble singing versus lead singing, or a drummer may want to assign a click track to the Dual Profile Channel and have two variations on its level instantly available.
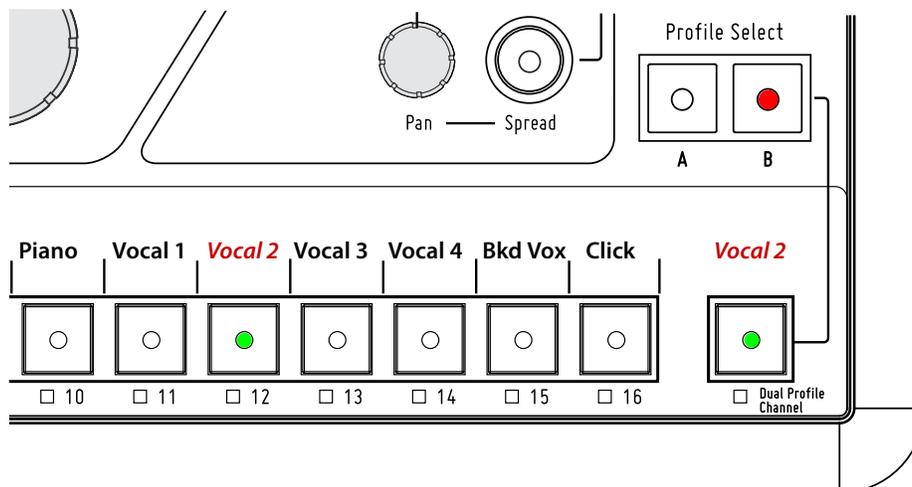
In this example the Dual Profile Channel is assigned to mirror channel 12; Profile B is selected.

The Dual Profile Channel may be selected by pressing the **Dᴜᴀʟ Pʀᴏfɪʟᴇ Cʜᴀɴɴᴇʟ** button, its channel mirror equivalent (in Pro16 or Default modes), or the **A** or **B** Profile buttons.

What Gets Stored in a Profile

The A and B Profiles save all channel-level settings per Profile, including:

- Channel Volume
- Reverb level
- Tone level
- Spread positioning for stereo channels
- Pan position for mono and stereo channels

Changes to the channel settings can be made at any time: simply press the Profile **A** or **B** button and begin editing. If another mix channel is selected, pressing either the **A** or **B** button acts as a shortcut, selecting the Dual Profile Channel and making the selected Profile ready for editing.

The Dual Profile Channel cannot be assigned to a channel that is already part of a Group. If you wish to assign the Dual Profile Channel to a channel that is part of a Group, you must first remove that channel from the Group. See page 28 for information about creating and using Groups.

Setting Up a Channel Mirror

The A360 allows any one of the 16 standard mix channels to be assigned to the Dual Profile Channel with a single button press, using the Dual Profile Channel as a shortcut to that mix channel. This is the behavior when the A360 rear-panel mode switch is set to either **Pro16** or **Default**.

To assign the Dual Profile Channel to mirror one of the standard mix channel:

1. The A360's rear panel switch must be in Pro16 or Default mode.
2. Press and hold the **Dual Profile Channel** button.
3. While holding the **Dual Profile Channel** button, press and then release one of the standard mix channel buttons 1-16 to make the assignment.
4. Release the **Dual Profile Channel** button.

Once assigned, pressing the Dual Profile Channel button will also light its mirrored channel's LED. Likewise, if you select the standard mix channel that has been assigned to be the Dual Profile Channel, both the mix channel button and the Dual Profile Channel button LEDs will light in sync. The mirrored channel's mix settings are copied to both the **A** or **B** Profiles as starting points for editing.

To edit one of the Profiles:

1. Select the **Dual Profile Channel** (or the channel it mirrors); its green LED should be lit.
2. Choose either the **A** or **B** Profile (the A Profile has a green LED and the B Profile has a red LED).
3. Make changes to the Reverb, channel-based Tone, Channel Volume, and Pan/Spread controls as needed. The settings are automatically preserved as you switch between the A and B Profiles. Remember that Spread is only available on stereo sources.

The Dual Profile Channel's *mirror assignment* is not saved when a Mix Preset is created; the channel-level settings for the A and B Profiles are saved when a Mix Preset is created. This means that if you save Mix Presets and then change the Dual Profile Channel mirror assignment, the Mix Presets will recall only settings into the A Profile; the Profile B settings will be set to default values.

Using the Dual Profile Channel as a Mix Channel

The A360's powerful Custom mode allows the user to go beyond the sequential channel mapping of Default mode, allowing each Personal Mixer's channel assignments to be customized to suit the needs of the performers. This becomes especially powerful when the network has input channel counts above 32 channels (or a combination of 16 mono and stereo sources) using 3 or 4 input devices.

A custom channel configuration created using the A360 Channel Manager software can include the mapping of a network slot to the Dual Profile Channel. Once this configuration is loaded into the A360 and the A360 rear-panel mode switch is set to **Custom**, the Dual Profile Channel functions as a very powerful and flexible 17th mix channel.

Channel Button	Channel Name	Stereo Link	Slot Assignment	Status
Editing: New		**Mixer Name: A360**		
1	Chan 1	◉ Mono ○ Stereo	11	OK
2	Chan 2	◉ Mono ○ Stereo	2	OK
3	Chan 3	◉ Mono ○ Stereo	12	OK
4	Chan 4	◉ Mono ○ Stereo	15	OK
5	Chan 5	○ Mono ◉ Stereo	9/10	OK
6	Chan 6	◉ Mono ○ Stereo	33	OK
7	Chan 7	○ Mono ◉ Stereo	13/14	OK
8	Chan 8	◉ Mono ○ Stereo	1	OK
9	Chan 9	○ Mono ◉ Stereo	17/18	OK
10	Chan 10	○ Mono ◉ Stereo	19/20	OK
11	Chan 11	○ Mono ◉ Stereo	21/22	OK
12	Chan 12	◉ Mono ○ Stereo	8	OK
13	Chan 13	○ Mono ◉ Stereo	25/26	OK
14	Chan 14	○ Mono ◉ Stereo	27/28	OK
15	Chan 15	◉ Mono ○ Stereo	6	OK
16	Chan 16	◉ Mono ○ Stereo	7	OK
Dual Profile Channel	DPC	○ Mono ◉ Stereo	3/4	OK
Ambience		◉ Mono ○ Stereo	Onboard Mic	OK

The Dual Profile Channel is using custom channel mapping as seen in the A360 Channel Manager software.

When a network slot has been assigned to the Dual Profile Channel as additional mix content and the rear-panel mode switch is set to **Custom**, you cannot use the channel mirror feature described previously.

✓ **Note:** Every A360 Personal Mixer in the personal mixing system can have a different network slot assigned to its Dual Profile Channel.


One-Touch Ambience

A common complaint amongst in-ear monitor users on stage (and headphone users in the studio) is that they feel cut off from their surroundings, and that it's more difficult to interact with other performers and hear audience reactions. Removing a monitoring device like custom ear monitors is somewhat time consuming and not always practical in a performance situation. Adding an ambient mic to bring outside sounds into the monitor mix can be a solution to these problems. The A360 offers two ways to do this: first, with its onboard mic and second, with the ability to assign room mics to the Ambience channel that have been set up by an engineer and made part of the network. Ambience can simply be turned on or off as needed with a single button press.

Onboard Mic

The A360 Personal Mixer includes a built-in microphone as part of the One-Touch Ambience™ feature. The onboard mic is designed to provide performers wearing earbuds or headphones a simple way to bring outside sounds into their mix, making it easy to have a conversation during rehearsal, for example. The mic has been specially optimized for speech intelligibility.

The One-Touch Ambience button turns the onboard mic on/off with a single button press. The button lights green when the mic is on.
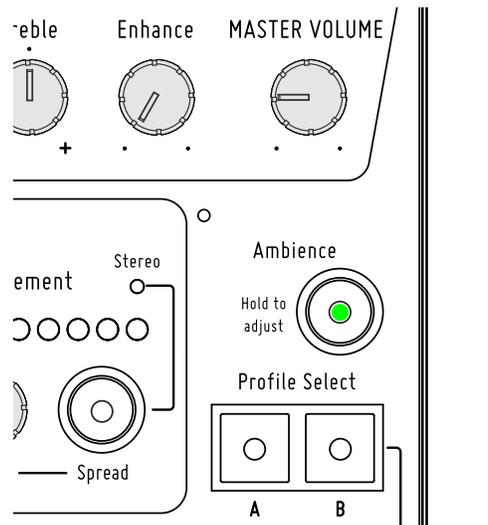
The ambience mic is on when the green LED is lit.

✓ **WARNING:**

       The onboard Ambience mic can cause feedback if the mic level and Master Volume levels are set too high. Use caution when using the mic with an open-air speaker or stage wedge and/or when removing earbuds or headphones after performing.

       As a precaution, turn off the Ambience mic and/or lower the **MASTER VOLUME** level before removing your earbuds or headphones.

Setting the Ambience Level

To set the One-Touch Ambience level:

1. Hold the **AMBIENCE** button down; its LED will be on.

2. Within a second, the Channel Volume LEDs will start to blink, displaying the current level (if no level is shown, the Ambience level is currently set to zero).

3. While still holding the **AMBIENCE** button down, turn the **CHANNEL VOLUME** knob to raise or lower the level; the red Channel Volume LEDs update to reflect the new level.

4. Release the **AMBIENCE** button when the desired level is set.

While setting the mic level, the Tone, Reverb, and Pan LEDs will not be lit, and the active mix channel LED will also go out.

The One-Touch Ambience level and its on/off state are saved as part of each Mix Preset.
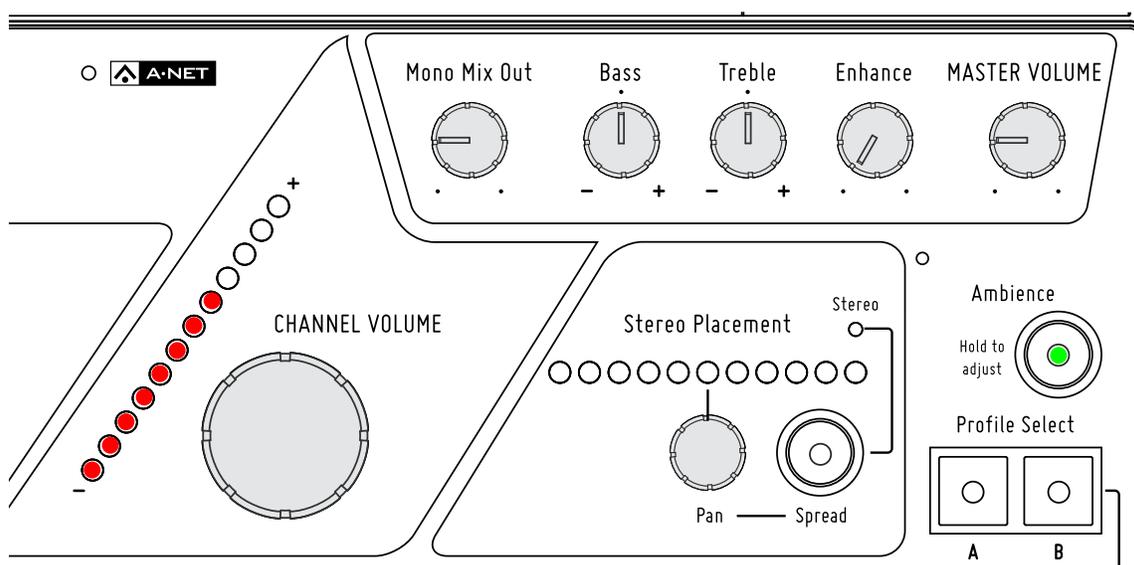
Hold Ambience and then turn the Channel Volume knob to set the level.

Using Network Audio For One-Touch Ambience

As with the Dual Profile Channel, the A360's Custom mode allows the user to go beyond the sequential channel mapping of the Default mode, customizing each Personal Mixer's channel assignments to suit the needs of the performers. With the A360 rear-panel mode switch set to Cᴜsᴛᴏᴍ, One-Touch Ambience can also be assigned to any available network source from the (up to) 64-channel Pro16e A-Net stream. One-Touch Ambience may have network audio assigned with or without the Dual Profile Channel being assigned, bringing the total available mono/stereo audio sources on the A360 to 18.

✓ Nᴏᴛᴇ: Custom channel mappings for each mix channel button, the Dual Profile Channel, and One-Touch Ambience must be unique; no duplicate mappings are allowed. The same network slot cannot appear on multiple buttons in Custom mode.

Channel Button	Channel Name	Stereo Link	Slot Assignment	Status
	Editing: New		**Mixer Name:** A360	
1	Chan 1	◉ Mono ○ Stereo	11	OK
2	Chan 2	◉ Mono ○ Stereo	2	OK
3	Chan 3	◉ Mono ○ Stereo	12	OK
4	Chan 4	◉ Mono ○ Stereo	15	OK
5	Chan 5	○ Mono ◉ Stereo	9/10	OK
6	Chan 6	◉ Mono ○ Stereo	33	OK
7	Chan 7	○ Mono ◉ Stereo	13/14	OK
8	Chan 8	◉ Mono ○ Stereo	1	OK
9	Chan 9	○ Mono ◉ Stereo	17/18	OK
10	Chan 10	○ Mono ◉ Stereo	19/20	OK
11	Chan 11	○ Mono ◉ Stereo	21/22	OK
12	Chan 12	◉ Mono ○ Stereo	8	OK
13	Chan 13	○ Mono ◉ Stereo	25/26	OK
14	Chan 14	○ Mono ◉ Stereo	27/28	OK
15	Chan 15	◉ Mono ○ Stereo	6	OK
16	Chan 16	◉ Mono ○ Stereo	7	OK
Dual Profile Channel	DPC	○ Mono ◉ Stereo	3/4	OK
Ambience		○ Mono ◉ Stereo	41/42	OK

Ambience is using custom channel mapping as seen in the A360 Channel Manager software.

Once assigned as a network audio channel, the One-Touch Ambience retains the mix-level properties of the onboard mic—only its Channel Volume can be changed. Reverb, Tone and Pan/Spread are not available. See the previous section, starting at page 16. Assigning the Ambience channel to network content is ideal if you need to bring a mix of mono or stereo ambient microphones hung in a performance space into the Personal Mixers. Properly configured, positioned, and processed room mics can be a powerful addition to an in-ear mix, bringing audience reaction into the monitoring environment.

While the onboard mic in the A360 can be used to bring audience sound into the local monitor mix, remember that the onboard mic is not always going to be in an ideal location to pick up ambience and imaging from the performance space as a stereo pair of room mics can. And this is especially true if *all* the performers need to hear the *same* ambience mics; for this application only a dedicated mono or (better yet) stereo ambient mic in a single location properly set up by an audio engineer is appropriate.
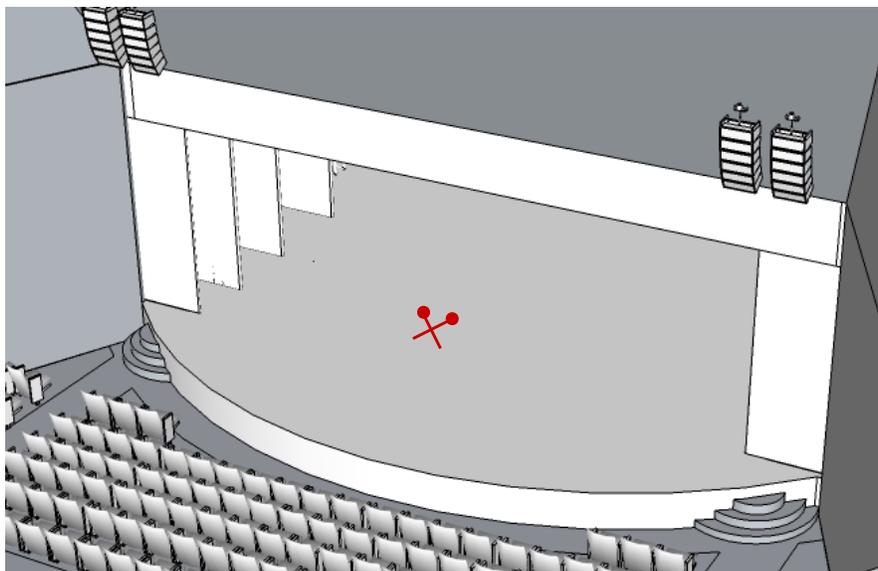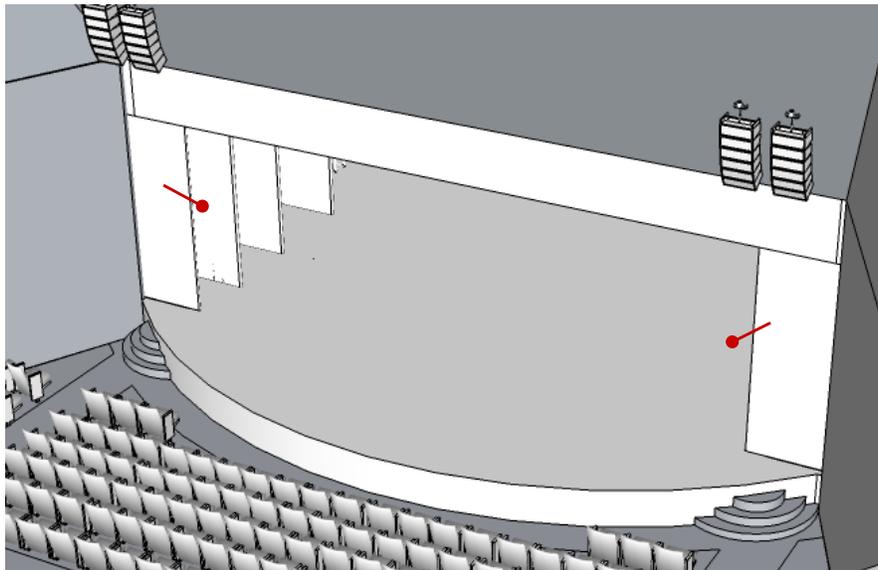
A pair of mics can be hung on the left and right sides of a stage (top) or as an X/Y stereo pair above the center of the stage (right) to bring ambient sound of the hall and audience reaction into all Personal Mixers.

Channel Controls Section

Each mix channel has separate Reverb, Tone, Volume and Pan/Spread settings available.
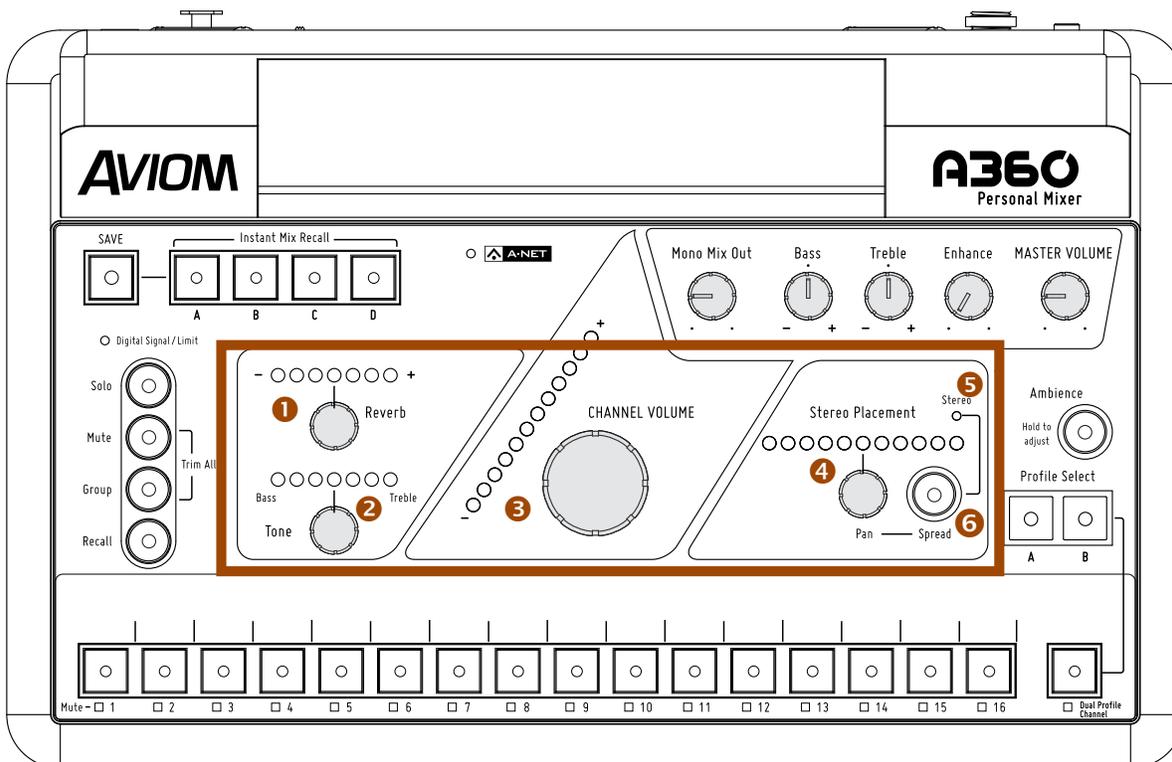
	Function
1	Reverb Knob and Reverb Level LEDs
2	Bass/Treble Tone Knob and Tone LEDs
3	Channel Volume Knob and Level LEDs
4	Stereo Placement Pan Knob and Pan/Spread LEDs
5	Stereo LED
6	Spread Button

Channel Controls

The individual channel control functions are available whenever one of the 16 standard mix channels or the Dual Profile Channel is selected. All channel settings are saved with a Mix Preset.
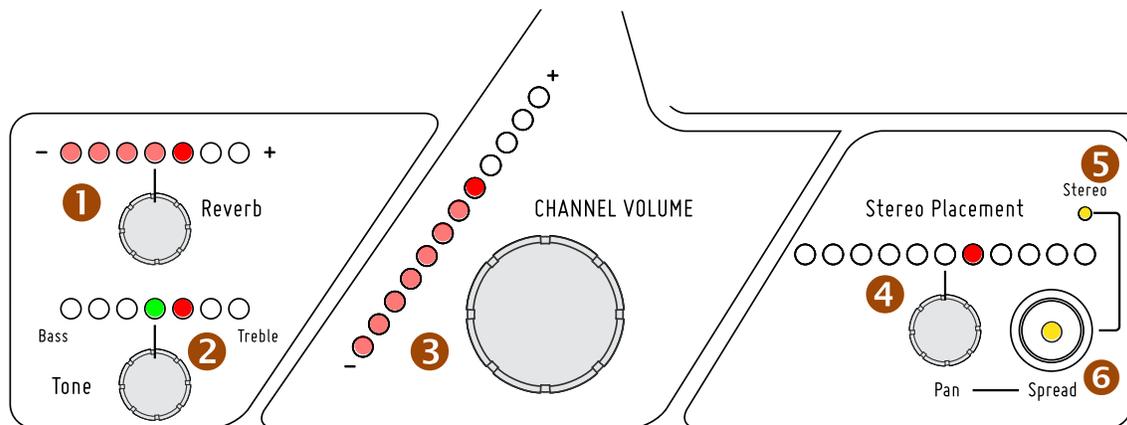
Volume, pan, tone and reverb can be set for each mix channel.

Reverb

Reverb can be added to any mix channel (including the Dual Profile Channel) to provide added space and depth to the mix. Used sparingly, reverb is especially useful for horn players and singers wearing earbuds whose monitoring experience changes dramatically when earbuds are worn.

To add reverb, first select the desired channel and then turn the REVERB knob clockwise to increase the Reverb level. The current Reverb level is displayed on the red Reverb LEDs. Two LED brightness levels are used—low and high. Each LED turns on first at its low level and then at its high level; only one LED will be at its full level while editing.

The A360 Personal Mixer's reverb algorithm is preset and is designed as an easy-to-use live monitoring tool. As such, no editable reverb parameters are available to the user.

Tone Control — Bass and Treble

Each mix channel as well as the Dual Profile Channel has a tone adjustment available in the channel controls section. This feature is designed to allow the user to enhance individual channels in a mix by adding either more low frequency or more high frequency EQ. It is a positive-only control specifically designed for the needs of live monitoring with 12 boost steps in each direction. A channel may have more bass or more treble added, but not both simultaneously; no cutting of these frequencies is available.

The Tone control setting for the selected channel is indicated with the Tone LEDs. The default setting is indicated with a green LED at the center point where the Tone control is flat—no bass or treble is added.

To add a bass boost to the selected channel, turn the **TONE** knob to the left. Two LED brightness levels are used for the red LEDs to allow for the maximum number of boost amounts to be displayed. To remove a bass boost turn the **TONE** knob to the right which will move the Tone LEDs back towards the green center (flat) position.

To add a treble boost instead of a bass boost, turn the **TONE** knob to the right; the red LEDs to the right of center will light. Turn the **TONE** knob left and return the Tone LEDs to the green center (flat) position to remove a treble boost that has been applied.

The Treble and Bass boosts are per-channel controls and are part of the overall digital mix. Adding excessive amounts of these EQ parameters to each channel can reduce fidelity and cause clipping which will be indicated with the Digital Signal/Clip LED to the left of the channel controls section of the mixer.

Channel Volume

Each channel's level in the current mix is set with the Channel Volume knob and its current level is displayed on the 12 LEDs associated with the control.

To set a mix channel level, select the channel to be changed and then turn the **CHANNEL VOLUME** knob. The red LEDs indicate the current volume for the channel. As with the Reverb and Tone LEDs, two LED brightness levels are used—low and high. Each LED turns on first at its low level and then at its high level. (Only one LED will ever be at its maximum brightness.)

To turn a channel off, turn the **CHANNEL VOLUME** knob fully left until no LEDs are lit. To silence a channel temporarily, use the Mute function.
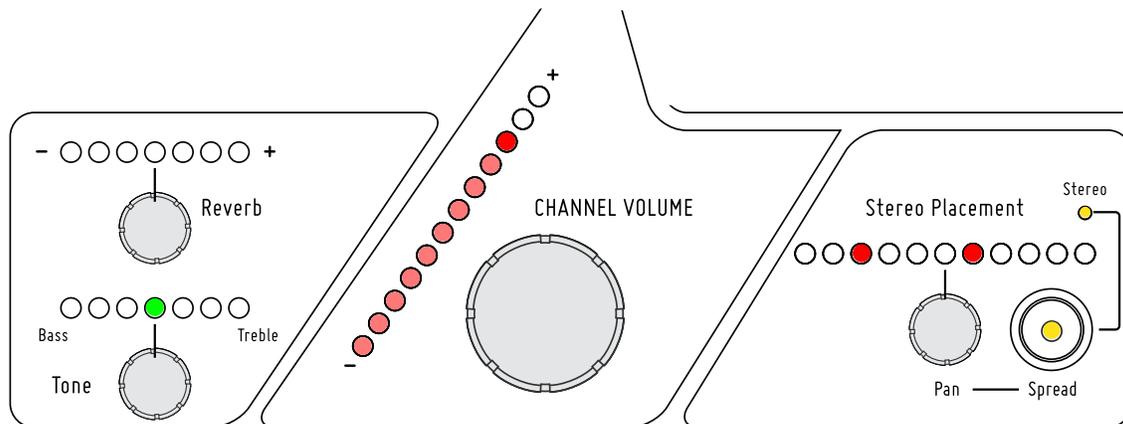
Set each channel's level with the Channel Volume control.

The Channel Volume setting for each of the 16 standard mix channels as well as for the Dual Profile Channel and Ambience is saved with each Mix Preset.

Stereo Placement

The A360 Personal Mixer offers a unique treatment of the stereo positioning controls for each channel in a mix. Every audio source can be heard in full stereo fidelity without taking up additional space on the mixer, creating a more realistic monitor mix environment for performers wearing stereo earbuds and headphones. Using stereo sources allows every channel to be positioned precisely in the mix's stereo image and provides a clearer, more accurate mix at a lower volume with no loss of fidelity.

✓ NOTE: The pan controls have no effect on the Mono Mix Out.

Mono Channels

The Stereo Placement section controls the selected channel's position within the mix's stereo image. A mono channel's position in the stereo field is indicated with a single green LED (when centered) or with one or two red LEDs (when panned left or right).

When a mono channel is selected, the yellow STEREO LED will always be unlit and the Spread function is unavailable. Pressing the SPREAD button when a mono channel is selected will cause the yellow LEDs in both the Spread button and the Stereo indicator to flash briefly as an indication that the feature is not available for the current mono channel.
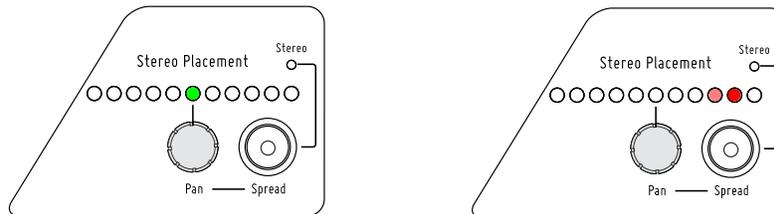
The default centered Pan position for a mono channel (left), and a mono channel shown panned (right)

To position a mono channel, turn the PAN knob left or right. The Pan LEDs have two brightness levels each, high and low.

To return the selected channel to its default position, turn the PAN knob until the green Pan LED is shown in the center of the Stereo Placement display.

Stereo Channels

Each channel button (including the Dual Profile Channel) on the A360 Personal Mixer can host either a mono or stereo channel. The advantage to this approach is in the simplicity afforded the user. A stereo source such as a piano, drum submix, or the left/right outputs of a stereo guitar processor are easily accessible with a single button press. This powerful feature makes it easy to keep stereo sources intact in a monitor mix rather than forcing the performer to listen in mono to save input channels.

Stereo sources are set up at the Pro16 or Pro16e input device feeding the A360 Personal Mixers by simply setting the stereo/mono Link switch for a pair of channels. On the A360, the stereo channel behavior is slightly different for the two variations of A-Net it can receive. The Pro16 version has a fixed 16-channel maximum, while the Pro16e version offers an assignable pool of up to 64 source channels, connected to up to four input devices, that may be mapped to the A360's sixteen mix channel buttons, the Dual Profile Channel, and the Ambience button.

Using a Pro16 Input Device

When a single 16-channel Pro16 input device (including the original AN-16/i Input Module, AN-16/i-M Mic Input Module, Y1 A-Net Card for Yamaha®, or the console cards built by Aviom partners that use the Pro16 A-Net technology) is connected to an A360 Personal Mixer, stereo channels are mapped to adjacent channel pairs. Odd-even adjacent mixer channels behave as one. For example, linking inputs 3-4 on an Y1 A-Net Card will cause an A360 mixer's channels 3 and 4 to light together when either is pressed. The Stereo LED on the A360 will light and the Spread function is also available when the Spread button is pressed.

✓ Note: The rear panel mode switch should be set to Pro16 for this application.

Using a Pro16e Input Device

When at least one Pro16e input device (such as the AN-16/i v.2) is used for inputs to the network, stereo sources will be mapped to a single A360 channel button when the input device's mono/stereo link switches are set to stereo. This is especially powerful when systems use multiple input devices* to get 32 inputs or higher (up to 64 maximum). As with the Pro16 input device example above, the Stereo LED on the A360 will light when a stereo channel is selected, and the Spread function will be available when the Spread button is pressed. When the A360 is receiving the enhanced Pro16e version of A-Net in a system of 32 or higher inputs, the rear-panel mode switch should be in the Default or Custom position.

If a single AN-16/i v.2 Input Module is used to create a personal mixing system of 16 inputs or less, the A360 rear-panel mode switch should be set to Pro16 so that even-numbered mono channels are not ignored. Remember, the A360 treats the odd-even channel pairs on the AN-16/i v.2 as a stereo left/right input when the A360 is set to Default mode and will ignore the right side input if the stereo/mono link switch on the input device is set to Mono.

* When at least one AN-16/i v.2 is used to create a system with multiple input devices, the first 16 channels of the network may come from any device that outputs the Pro16 version of A-Net including: the original AN-16/i, AN-16/i-M, AV-M8, Y1 A-Net Card, partner console cards, or the Pro64 ASI A-Net Systems Interface. Stereo links for the ASI are set from the front panel of Pro64 I/O devices or by using the Pro64 Network Manager software.

Understanding Pan and Spread

On the A360, Spread is used to indicate the distance between the left and right sides of a stereo channel. The default spread for a stereo source is full left and full right.
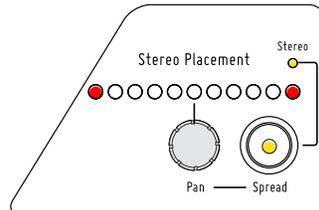
The default spread for a stereo source

To change the Spread for a stereo channel, press the **Spread** button; its yellow LED lights. Turning the **Pan** knob left will now change the distance between the two sides bringing them closer together; the red left and right LED indicators will move in sync. Eventually the stereo signal will collapse to mono, indicated by a single LED in the Pan display.

✓ **Note:** The Stereo LED and Spread button's LED remain lit even when the signal has been collapsed to mono by the Spread control.
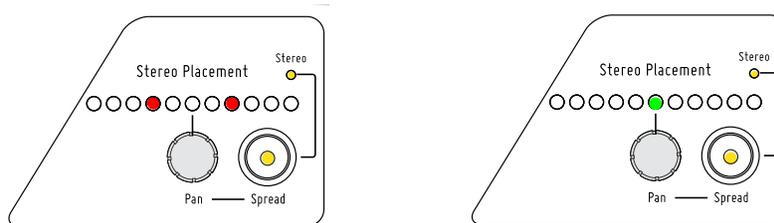
A stereo channel's Spread has been made narrower (left) and collapsed to mono (right).

Panning Stereo Channels

Stereo channels can be positioned in the stereo field by using the **Pan** control. This is an extremely powerful feature for those monitoring in stereo using in-ears or headphones.

Placing stereo source channels in the stereo field in the same relative positions that they are on stage or in the studio allows more realistic monitoring and uses sonic placement to improve clarity and imaging rather than relying on just volume.

The example graphics below show the powerful effects of using stereo panning and placement to enhance imaging in a stereo mix.
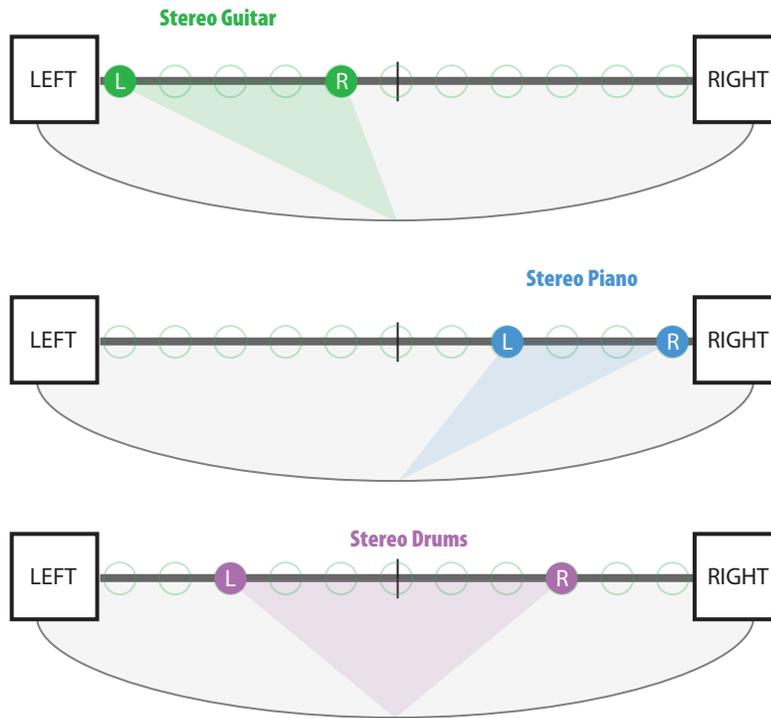
Three stereo channels are shown panned to various locations within the stereo image.
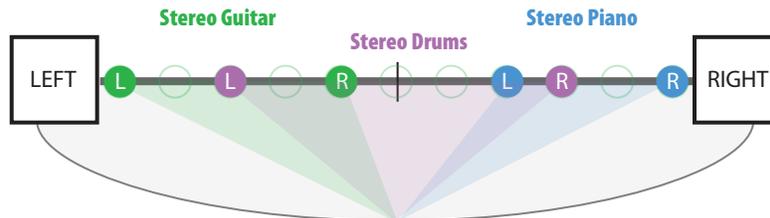
The effects of stereo Spread plus panning: a stereo guitar is panned left, a stereo piano is panned right. With stereo drums panned less than full left/right, the stereo imaging is improved.

To pan a stereo channel, make sure that the **Spread** button's LED is not lit (press the **Spread** button to turn it off if necessary) and then turn the **Pan** knob to position the channel within the stereo field.

Continuing to turn the **Pan** knob left or right will start to collapse the image of the stereo channel to mono. Reversing directions will restore the spread between the left/right sides of the channel only while editing. If another mix channel is selected while that channel is collapsed to mono, the previous channel's spread is set to mono. Its stereo spread can be restored by reselecting the channel and reactivating the **Spread** button and setting a new Spread amount.

Editing Controls Section

The Mute, Solo, Group, and the Trim All functions are available in this section, along with the Digital Signal/Limit LED indicator.
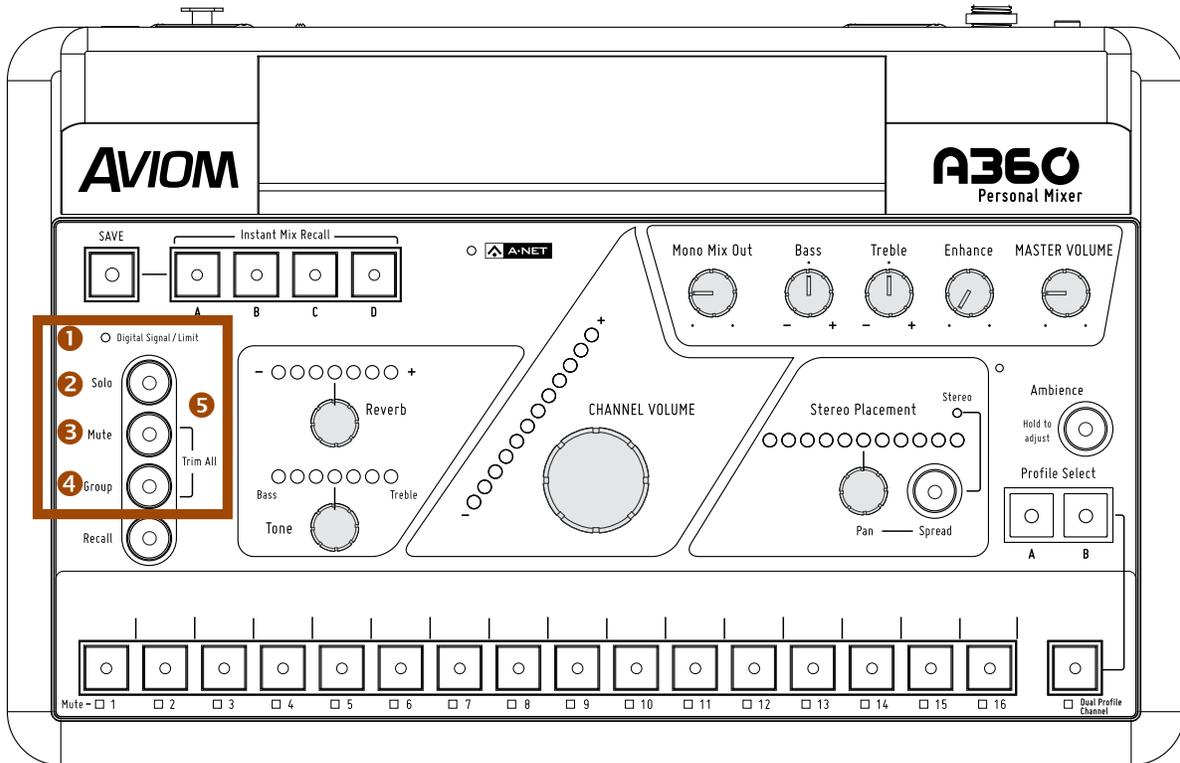
	Function
1	Digital Signal/Limit LED, bi-color green/red
2	Solo Button
3	Mute Button
4	Group Button
5	Trim All Function (Mute + Group buttons)

Digital Signal/Limit

The A360 includes custom limiting circuitry to maximize headroom and minimize clipping in the digital domain. A bi-color Digital Signal/Limit LED is provided to help maintain a high fidelity, distortion-free mix. The LED lights green under normal circumstances. As channel mix levels begin to increase, peaks (especially those from percussive sources) will begin to light the red LED to indicate that some limiting has started to occur.

When the red LED is on frequently, this is an indication that your mix headroom is being compromised. Turning down the Master Volume knob will not reduce clipping or eliminate distortion in this case; the Master Volume changes the output level *after* the digital mix has already been created. The solution is to use the Trim All function which lowers all channel mix volumes uniformly. (See the explanation that follows on page 31.)

Solo Button

To hear a mix channel (or Group) isolated from the mix without changing the mix settings, press the Solo button; the green Solo LED blinks. While the Solo LED is on, select any channel to hear it in solo and make channel-level edits to its volume, Reverb, Tone, and Pan/Spread settings; pressing another mix channel button while in Solo puts the newly selected channel into solo and silences the previous channel. Double-click channels or Groups to add them to the existing solo channels. Exit the Solo state by again pressing the Solo button; the Solo LED stops blinking and goes out; the A360 returns to the normal mixing state.
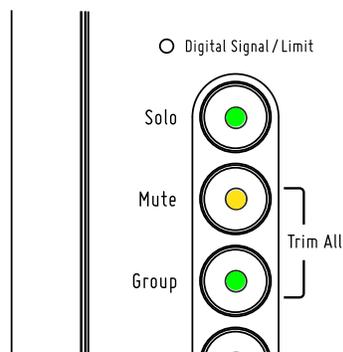
Solo, Group and Mute buttons with their LEDs

The following rules apply when the Solo button is engaged:
- Channel-level settings (Tone, Reverb, Channel Volume and Stereo Placement) can be changed for the selected channel (its channel button LED is lit solid).
- The Mute button is ignored on the selected channel that is in solo.
- Groups can be auditioned in solo but individual channels within a Group cannot.
- The Trim All function (Mute plus Group) is unavailable.
- Standard Mix Presets cannot be saved or recalled.
- Pressing one of the Instant Mix Recall buttons will exit Solo mode and load the selected Mix Preset.
- Ambience cannot be placed in Solo.

Mute Button

Use the Mute function to silence a channel or Group in a mix without having to edit its volume. Mute is a simple way to eliminate elements from a mix; the state of the channel mute for each mix channel (including the Dual Profile Channel) is saved when a Mix Preset is stored. Any number of channels may be muted. The One-Touch Ambience channel remains available so that its mic may be used for communication during rehearsals, etc.

To mute a channel, press the **Mute** button. The yellow LED in the Mute button itself lights yellow as does the yellow Mute LED below the mix channel button. While muted, the channel may still be edited. Pressing any other unmuted channel button will cause the Mute button's LED to go out.

To unmute a channel, start by selecting the channel. The yellow LED in the Mute button should be lit. Press the **Mute** button; the yellow LED in the Mute button and the associated channel's Mute LED go out. See page 11 for additional Mute LED information.

Group Button

A Group allows any combination of mono or stereo channel buttons to be joined together for simplified volume control. For example, grouping five vocal channels allows the levels of all five channels to be raised or lowered together while maintaining their relative volume offsets and stereo placement.

Four user-defined Groups are available within each Mix Preset stored in the A360 Personal Mixer. By default, no Groups exist. A Group may contain any combination of the 16 mono or stereo channel buttons, but note that a channel button cannot be a member of more than one Group. The Dual Profile Channel cannot be included in a Group, and a Group cannot be configured while the Dual Profile Channel is selected.

Configure a Group

To create and configure a Group:

1. Select any mix channel except the Dual Profile Channel.
2. Press the **Group** button to enter the Group editing mode. The button's green LED blinks.
3. Select the first mix channel (1-16) that you want to be in the Group. Its channel button LED will light solid.
4. Make any adjustments to the channel's Reverb, Tone, Channel Volume, and Stereo Placement settings.
5. Add mix channels to the Group by double-clicking their channel buttons. The LED in each channel button added to the Group will stay lit, indicating that it is selected; adjust its channel-level controls as needed. Other mix channels already in the Group blink.
6. Double-clicking the selected channel within a Group (while its LED is lit solid) removes it from the current Group and selects it as the first channel in a new Group. The old Group is preserved and can be selected for editing by pressing any mix channel button that is still a member of the previously defined Group.
7. To remove a mix channel that is not the currently selected channel (its LED is blinking, not lit solid) from a Group, simply double-click the channel button.
8. After the last Group member has been added and adjusted, press the **Group** button again to exit the Group edit mode. Groups are ready to use in your mix.

When using Pro16 Mode on the A360, stereo links are treated as pairs of adjacent odd-even channels. Double-clicking either the left or right side of the stereo pair will add or remove it from a Group. It is not possible to add only one side of a stereo pair to a Group.
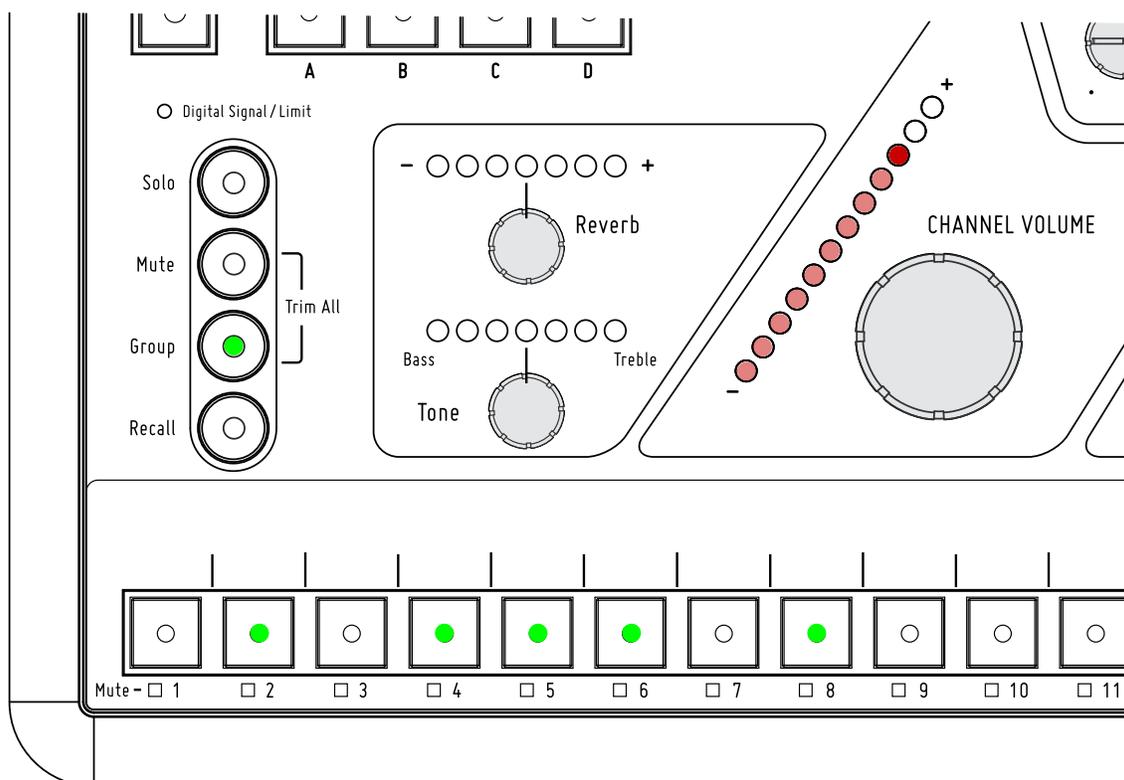
In this example, mix channels 2, 4, 5, 6, and 8 are grouped together. The Channel Volume knob controls the Group volume.

The Dual Profile Channel (and the mix channel assigned as a channel mirror to the Dual Profile Channel in Pro16 Mode and Default Mode) cannot be included in a Group. The Group button's LED will blink rapidly as an error indication if you attempt to start creating a Group with the Dual Profile Channel (or its channel mirror) selected. Choose a different channel button and try again.

Mixing With Groups

Once a Group has been configured, pressing any mix channel button that is part of a Group will light the channel button LEDs in all Group members plus the Group button LED. The CHANNEL VOLUME knob on the A360 will then adjust the overall level for the selected Group. Pressing the MUTE button will mute all members of the Group; the SOLO button will place the entire Group in solo mode.

You can create up to four Groups for the current mix. The Group configurations as well as their volume and mute status are saved as part of a Mix Preset.

When a Group is selected while mixing on the A360, the Reverb, Tone, and Stereo Placement controls are disabled. These settings can only be changed when in the Group edit mode. See the explanation that follows.

Edit a Group

Once a Group has been defined, the individual channel components of the Group can still be edited. To make changes to a Group:

1. Select one of the of four defined Groups to be edited by pressing any channel button that is included in the Group. The Group button's LED should be lit solid.

2. Press the GROUP button to enter the Group edit mode. The Group button's LED blinks.

3. Note that in the Group, one of the channel buttons has its LED lit solid while all others are blinking. This is the mix channel that is selected for editing.

4. Press any channel button within the Group that you want to edit. Its LED lights solid, all others will be blinking.

5. Make channel-level changes to the Channel Volume, Reverb, Tone, and Stereo Placement settings for the selected channel.

6. Select other channels in the Group and edit their channel-level settings as needed.

7. Add or remove channels from the Group by double-clicking their channel buttons. Adding a channel to the current Group being edited that is already a member of another Group removes the original Group association.

8. Press the GROUP button again when finished editing. The Group is ready for use in the current mix.
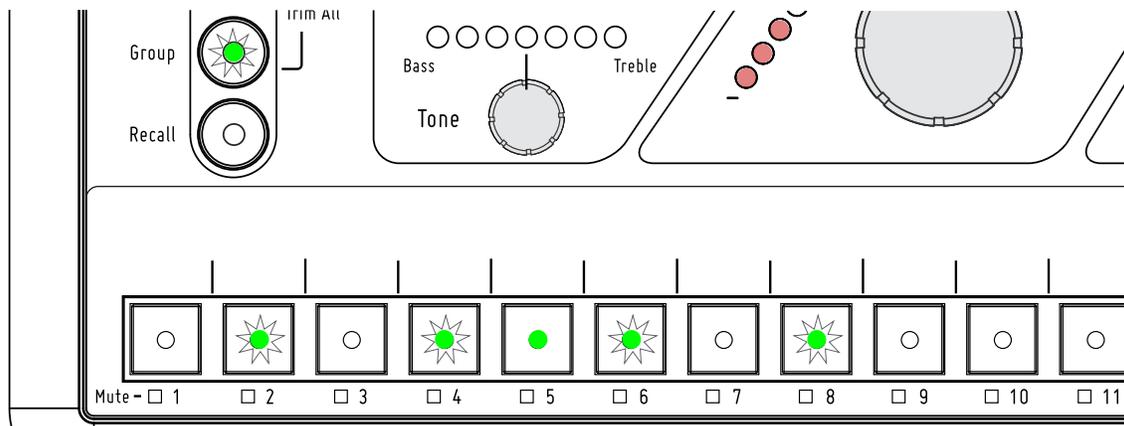
Channel 5's LED is lit solid, meaning it is selected for editing within the Group. All other LEDs are blinking.

Stereo Links and Groups

The following rules apply when using Pro16 mode and working with stereo channels in Groups.

- Turning a stereo link on when only one channel of the new stereo pair is in a Group will cause the companion channel to be added to the Group.

- When a stereo link is turned on while the channel pair is split between two Groups, the right (even) channel will be removed from its Group and added to the Group containing the left (odd) channel of the stereo pair.

- When a Group contains only two channels *and* those channels are an adjacent odd-even pair, turning on the stereo link at the input device will cause those channels to become a single stereo mix channel on the A360; the Group is cleared.

- If a stereo link is activated causing a channel to be removed from a Group so that it leaves a single channel in the old Group, that Group will be cleared since a Group requires two or more channels.

- If channels in a Group are removed so that only one channel (mono or stereo) remains in the Group, that Group is eliminated; the channel will behave normally.

Trim All Function

The Trim All function is an easy way to turn down the volume of all 16 channels in a mix by a uniform amount with a single command. Use Trim All to clean up a mix if the red Digital Signal/Limit LED is lit solid, or if a channel being edited is already at its maximum level and you want to continue to raise its volume relative to the other elements in the current mix.

To use Trim All, simultaneously press the **MUTE** and **GROUP** buttons. Each press of this button combination lowers all channel volumes (including the Ambience channel) by 3dB. Trim All is not available if a channel is in Solo.
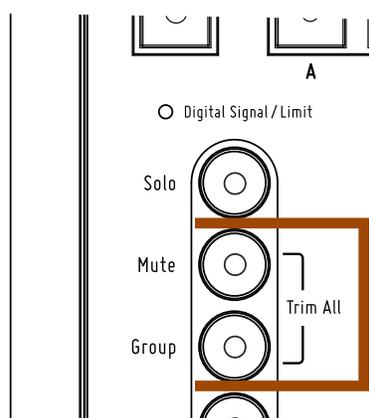
Press Mute plus Group to trim all channel volumes by 3dB.

Once the mix has been trimmed the desired amount, you can continue making mix adjustments as needed; save the mix as a preset to retain the changes.

After using the Trim All function to eliminate clipping as described above, you may need to raise the Master Volume level to compensate for the lower overall mix level.
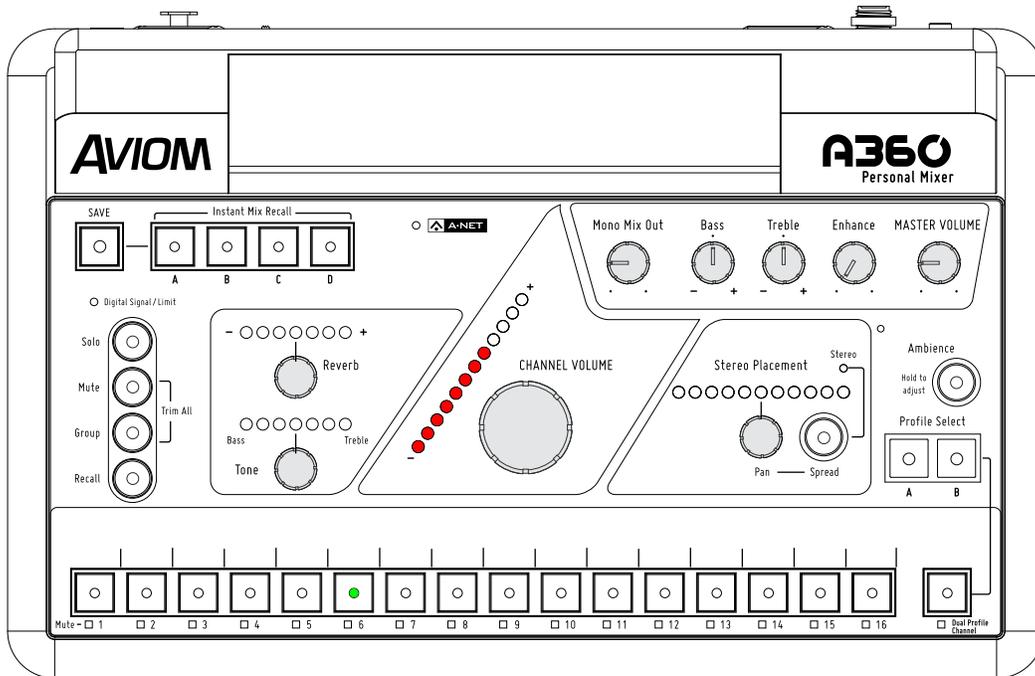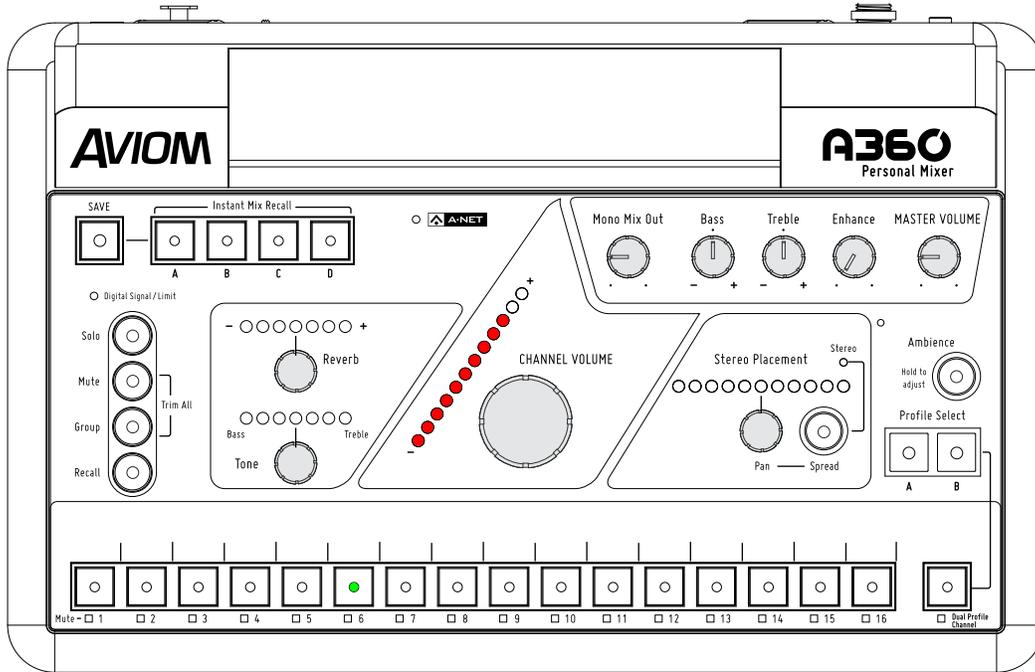
The effect of using the Trim All function is seen for channel 6. All other mix channel levels are reduced by the same amount.

Master Section

The master section of the A360 Personal Mixer's interface includes the A-Net LED and the global master volume and tone controls.
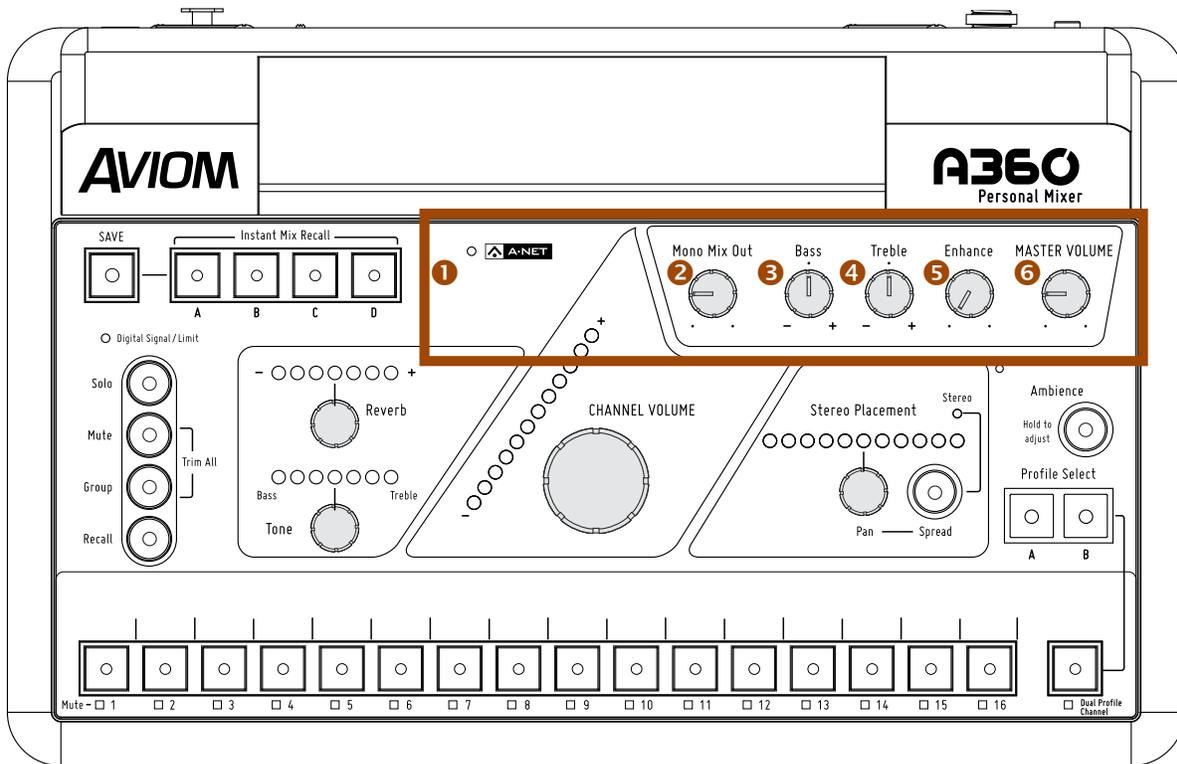
	Function
1	A-Net LED, bi-color green/red
2	Mono Mix Out Volume Control
3	Bass Tone Control
4	Treble Tone Control
5	Enhance Tone Control
6	Master Volume Control

Master Section Functions
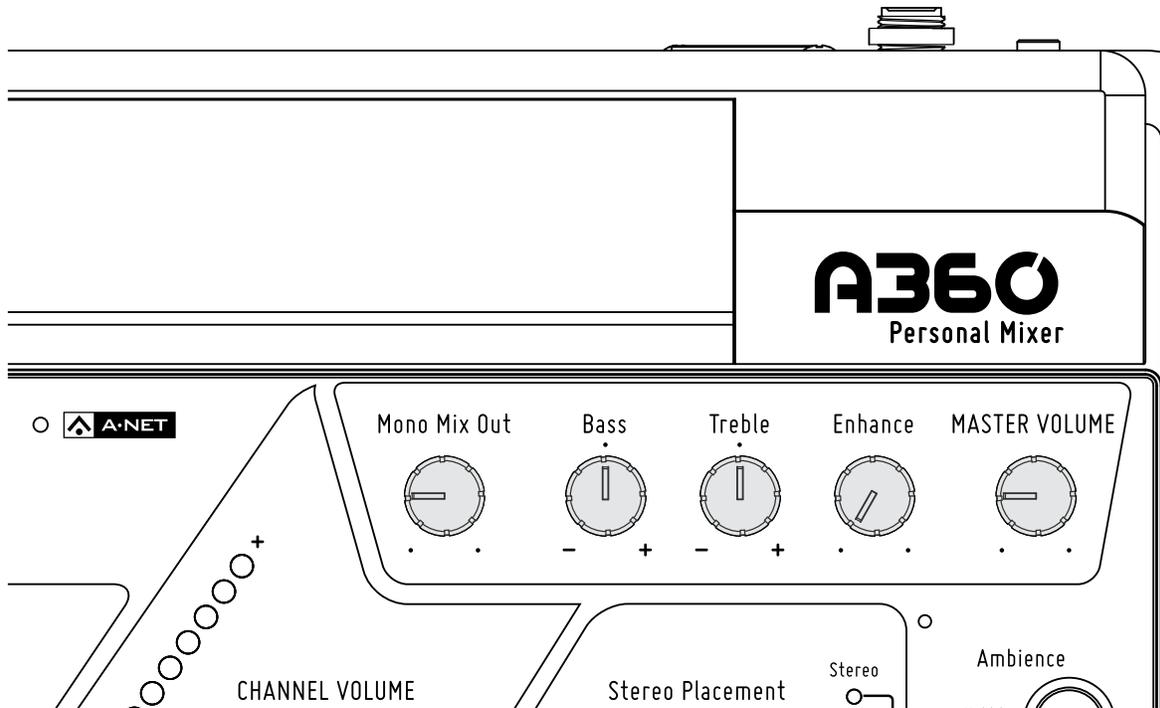
Master Volume

The **MASTER VOLUME** control sets the level for the 1/8-inch and 1/4-inch Stereo Mix Out jacks on the rear panel. It also sets the level of the mix sent to the Mono Mix Out jack on the rear panel. When using only the Mono Mix Out, start with the **MASTER VOLUME** at 12 o'clock and adjust the **MONO MIX OU**t knob as needed.

The Master Volume level is not saved as part of a Mix Preset.

Mono Mix Out

The A360 generates a balanced line-level mono mix that makes connecting a subwoofer, bass shaker, or powered speaker easy. The **MONO MIX OUT** knob controls the level of the mono mix being sent to the **MONO MIX OUT** XLR jack on the rear panel. The output level of the mono mix is determined by the overall Master Volume level, which must be turned up to hear the mono mix even if no stereo monitoring device is connected to the A360.
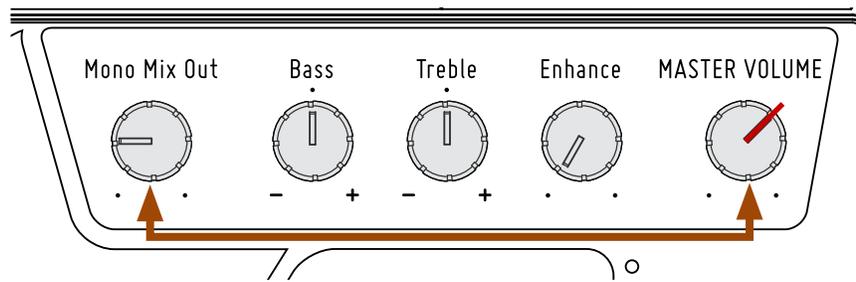
Master Volume determines the mix level available to the Mono Mix Out.

The A360 automatically generates a mono mix regardless of any stereo placement and/or panning used in the stereo mix heard at the **STEREO MIX OUT** jacks. The Mono Mix Out level is not saved as part of a Mix Preset.

Bass Tone Control

The master section's **BASS** tone control adds or subtracts low frequencies from the mono and stereo mix outputs. It is designed as overall tone compensation for the headphones, earbuds, or speaker systems connected to the A360 Personal Mixer.

The default setting for the Bass tone control is at 12 o'clock (flat). The Bass tone control's position is not saved as part of a Mix Preset.

Treble Tone Control

Use the **TREBLE** tone control to add or subtract high frequencies from the mono and stereo mix outputs.

The default setting for the Treble tone control is at 12 o'clock (flat). Like the Bass tone control, the Treble tone control's position is not saved with a Mix Preset.

Enhance Tone Control

The **ENHANCE** control is a specially developed bass and treble EQ curve designed to increase low-end punch and high-end brilliance in a mix. It is especially useful for performers listening through in-ear monitors.

The default position for the Enhance control is fully left—off. To use the Enhance control, start by creating a mix with the control in the full off (counterclockwise) position. Then start raising the **ENHANCE** knob slowly while listening to the mix until you find an amount that's pleasing.
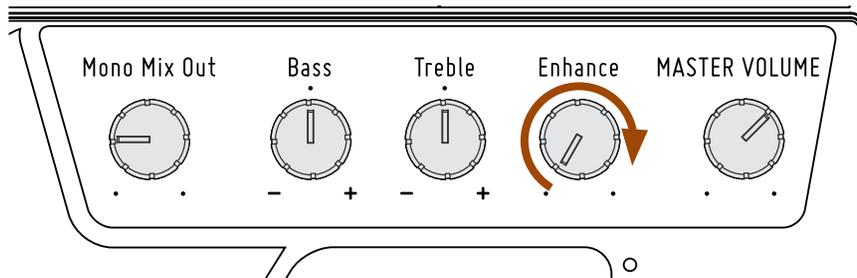
To experience the Enhance feature, slowly rotate the Enhance knob while listening to a mix.

The amount of the Enhance tone control is a global setting and is not saved in a Mix Preset.

A-Net LED

The A-Net LED lights whenever a valid Pro16 or Pro16e A-Net signal is connected to the A360. When the 16-channel Pro16 version of A-Net is connected, the LED lights green; when the enhanced (up to) 64-channel Pro16e version of A-Net is connected, the LED lights red. The rear-panel mode switch must be set accordingly. See page 45.
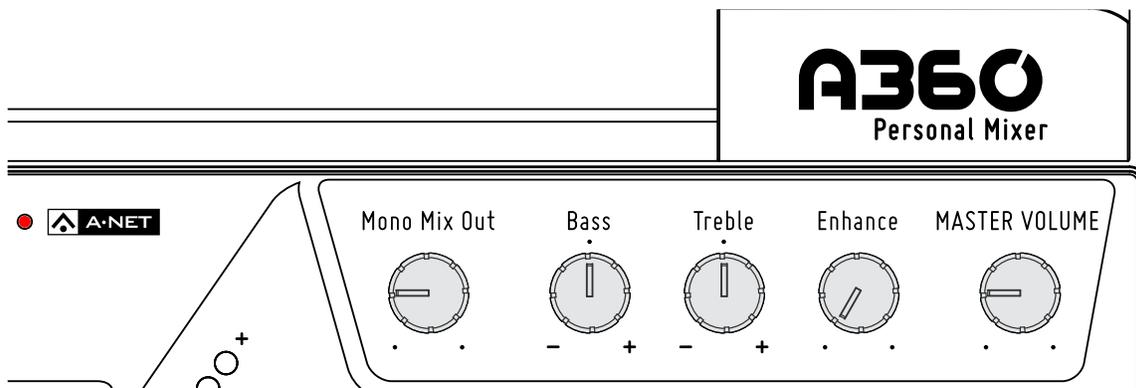
The A-Net LED lights red when it receive a valid Pro16e A-Net signal.

Mix Presets

Mixes created on the A360 can be saved to the four Instant Mix Recall locations or to the sixteen mix channel button locations— for a total of 20 mixes.
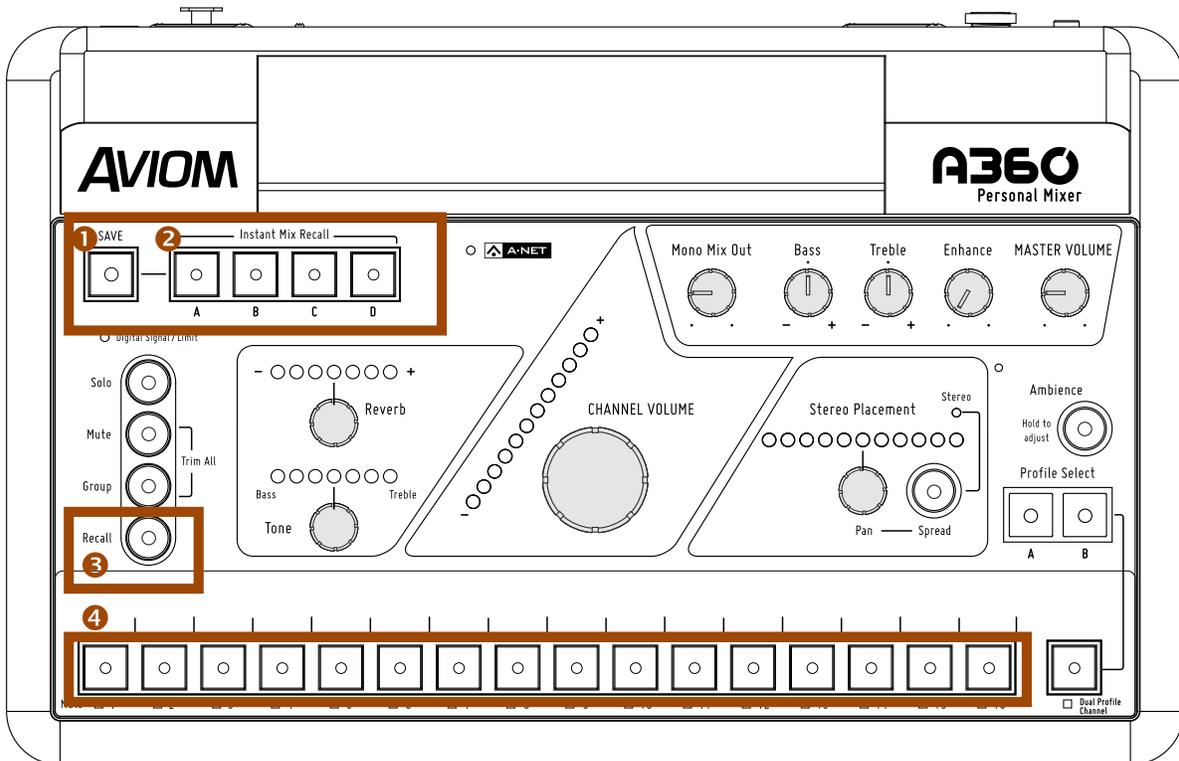
	Function
1	Save Button
2	Instant Mix Recall™ Buttons A, B, C, and D
3	Recall Button
4	Channel Button Memory Locations

Saving Mix Presets

The A360 Personal Mixer can save up to 20 Mix Presets—16 are stored using the channel select buttons numbered 1-16 as storage locations while an additional four can be saved in the Instant Mix Recall™ locations A-D. Mixes are retained in the A360 even when the mixer is powered down.

When a Mix Preset is created, the A360 stores the channel-level settings for the 16 standard mix channels and the Dual Profile Channel, plus the level setting for the One-Touch Ambience button. See page 42 for a complete list of what does and does not get saved in a preset.

All 20 Mix Presets in the A360 can be backed up to a PC or copied to another A360 by saving the A360's configuration to a USB memory stick in Program mode. See page 51 for information on saving to USB.

✓ **NOTE:** It is important to remember that the position of the rear-panel mode switch and the type of A-Net data (original 16-channel maximum Pro16 or enhanced 64-channel maximum Pro16e) that is in use when Mix Presets are created will have an impact on presets. This is because the two types of A-Net use different channel mapping schemes and treat stereo channels differently. Pro16 Mix Presets cannot be used in Pro16e mode and vise-versa. The Recall button and the mix storage location's button will blink as an error warning if a mix cannot be recalled.

Save Button

The Save button is used to store a Mix Preset to either a channel button location (1 through 16) or one of the four Instant Mix Recall locations (A, B, C, and D).

Save a Mix Preset to a Standard Location

To save a mix to one of the channel button locations:

1. Hold down the **SAVE** button
2. The red LED in the Save button will blink.
3. While still holding the **SAVE** button, press one of the 16 standard channel buttons.
4. Release the **SAVE** button.
5. As a confirmation, all 16 channel buttons will blink briefly.

While holding the Save button, you can store a mix to multiple locations if desired. Each save action will display the confirmation message (all 16 channel buttons blink briefly).

✓ **TIP:**

To determine which Mix Preset was last recalled or saved, hold the **SAVE** button. The preset location's LED will blink as a reminder. Release the Save button to return to the mix.
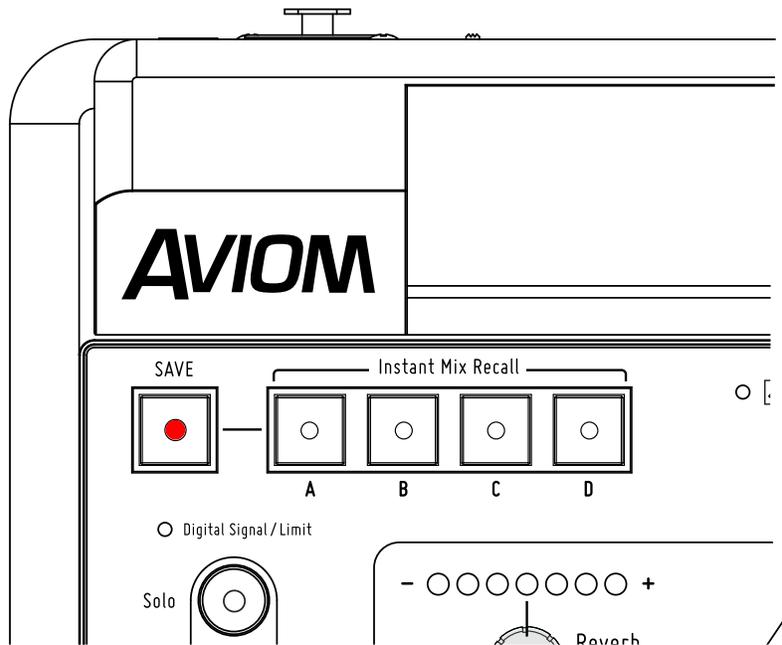
The Save button is used for both Instant Mix Recall locations and standard mix locations.

✓ NOTE: The Save button cannot be activated if a channel is in Solo.

Instant Mix Recall Buttons

As their name implies, the four Instant Mix Recall™ locations allow a saved mix preset to be recalled with one button press. The four locations, labeled A, B, C, and D, save the same mix-level data as when a mix is saved to a standard preset location associated with a channel button.

Save to an Instant Mix Recall Location

To store a mix to a Instant Mix Recall location:

1. Hold down the **S**AVE button.
2. The red LED in the Save button will blink.
3. Continue to hold the **S**AVE button and then press Instant Mix Recall button **A**, **B**, **C**, or **D**.
4. Release the **S**AVE button.
5. The channel mix buttons will flash to confirm the save operation and the Instant Mix Recall button where the mix was just stored will light green.

After saving a mix to an Instant Mix Recall location, its LED will remain lit as a reminder until another Mix Preset is stored.
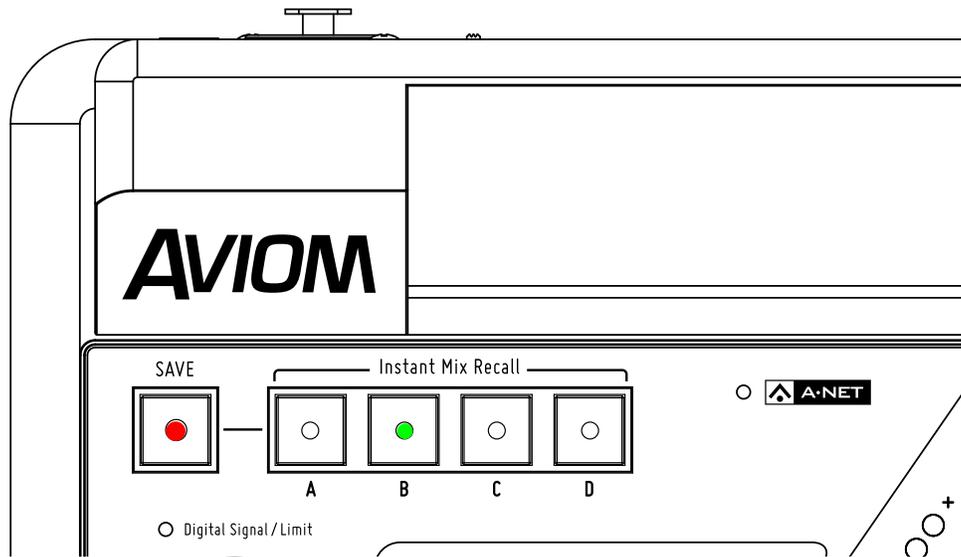
A mix is saved to Instant Mix Recall location B.

To Recall an Instant Mix Preset

Once mixes have been saved to one of the four Instant Mix Recall locations, they can be instantly recalled by simply pressing the **A**, **B**, **C**, or **D** buttons. The new mix may be used immediately.

Recall Button

The Recall button is used only with the Mix Presets that have been saved to one of the 16 channel button locations, it is not required when using the Instant Mix Recall presets.

To Recall a Standard Mix Preset

To recall a mix that has been stored in one of the A360 Personal Mixer's standard mix locations (the channel buttons 1-16):

1. Press and then release the Recall button; its yellow LED will blink.
2. Press the channel button that corresponds to the mix you wish to recall.
3. The mix is recalled and the yellow LED in the Recall button goes out.

✓ **Note:** Remember that Mix Presets created in Pro16 mode cannot be recalled when the Personal Mixer is in the Pro16e Default or Custom modes and vice versa. The Recall button and the mix channel will flash as an error warning if you try to recall an invalid Mix Preset.
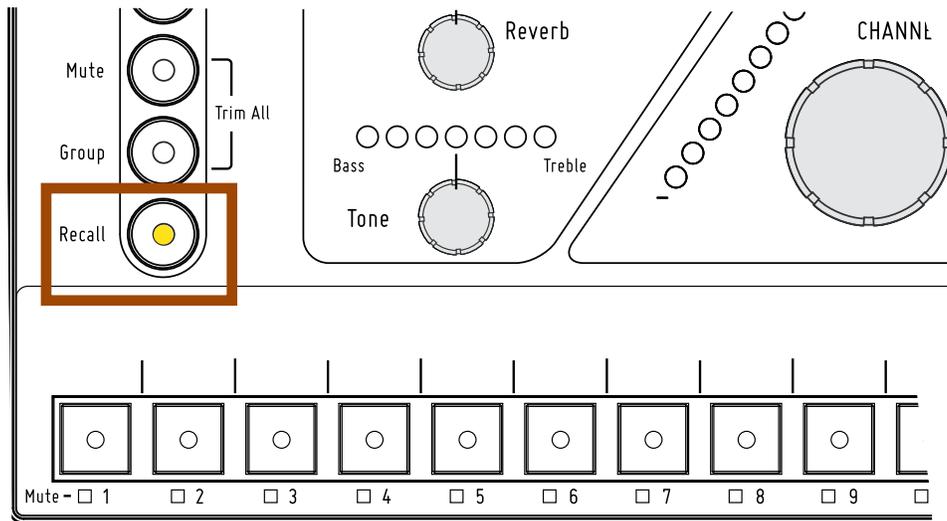
Press the Recall button followed by a channel button to recall a mix.

✓ **NOTE:** Mixes cannot be saved or recalled if a channel is in Solo mode, as indicated by the flashing green Solo LED.

Clear a Mix

The current mix can be cleared and reset by holding the **RECALL** button and then pressing the **MUTE** button, returning all channel level settings to their default values. Resetting a mix does not erase the mix parameters stored in memory for a standard Mix Preset or Instant Mix Recall location. To overwrite a mix after performing a reset, use the Save button procedures described previously. See page 38.

This command resets the following:
- Channel volumes are set to zero
- All channels are unmuted
- Pan for all channels is set to center
- Spread for all stereo channels is set to full
- Channel Tone settings are set to center (flat)
- Reverb levels for all channels are set to zero
- Groups are cleared
- The Dual Profile Channel's mix values are reset for Profiles A and B
- Profile A is selected
- Channel Button 1 is selected
- Ambience is reset to its default level

Channel mapping assignments, the Mode switch position, and all saved Mix Presets are unaffected.

What Gets Saved in a Mix Preset

The following settings are saved when a Mix Preset is created:

- Channel Mapping type - Pro16 or Pro16e
- Channel Volume
- Channel Reverb level
- Channel Tone setting
- Channel Pan
- Channel Spread (stereo channels only)
- Channel Mute on/off
- Channels assigned to Groups
- Last selected mix channel
- A/B Profile channel-level settings and selection of either A or B Profile
- Ambience level
- Ambience on/off

Settings Not Saved in a Preset

The following are not saved when a Mix Preset is created:

- Master Volume level
- Mono Mix Out level
- Master Bass tone control amount
- Master Treble tone control amount
- Enhance tone control amount
- Rear-panel mode switch position
- Stereo Link settings (links are created at the input device)
- Channel mirror assignment for the Dual Profile Channel
- Channel mapping (network slot assignments) for the 16 channel buttons created with the A360 Channel Manager software and loaded in Program mode
- Custom Mode channel mapping (network slot assignments) for the Dual Profile Channel and Ambience button

---

✓ **NOTE:** Remember that a Mix Preset does not store custom channel mappings created with the A360 Channel Manager software. Mix presets are designed to work with the specific channel mapping configuration that was in use at the time the Mix Preset was saved. Therefore, if a different mixer configuration is loaded, there is no guarantee that the new channel map will work with the channel-level settings saved in the Mix Presets.

A360 Personal Mixer Rear Panel

	Function
1	Stereo Mix Out – 1/8-inch and 1/4-inch TRS
2	Mono Mix Out – XLR male
3	USB Data Port
4	Mode Switch – 4-position
5	A-Net In – EtherCon® RJ45
6	DC Power in

Rear Panel Features

This section details the function of each of the rear panel features on the A360 Personal Mixer.

Stereo Mix Out

Both 1/8-inch and 1/4-inch TRS Stereo Mix Out jacks are provided for simplified connections to earbuds and headphones. Both outputs can be used at the same time if needed, but note that the impedance of both devices should be similar to avoid a volume imbalance.

The TRS output may also be used as a line-level output when connecting the Stereo Mix Out to a wireless in-ear transmitter or a set of powered stereo speakers. A TRS to dual TS splitter cable is required for this application (sometimes referred to as an insert cable or Y-cable). A splitter cable provides separate unbalanced TS left and right signals to the inputs of the receiving device.

✓ NOTE: Do not connect the TRS output from the Stereo Mix Out jacks to a balanced mono input. A balanced audio input is differential—it subtracts the positive signal from the negative signal to remove any noise and interference picked up in the cable. The TRS Stereo Mix Out is not a balanced signal.
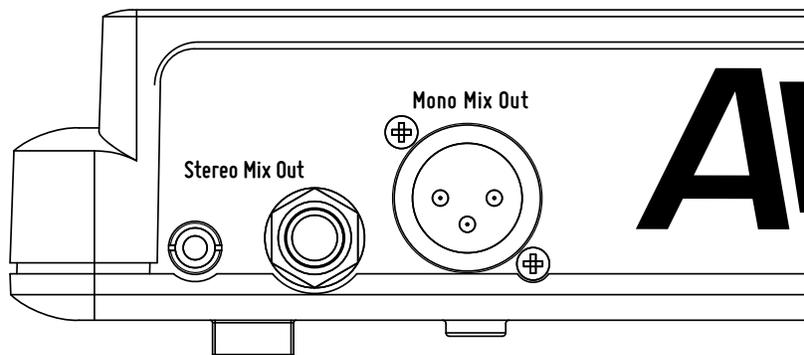
The Stereo Mix Out with 1/8" and 1/4" TRS jacks are shown along with the XLR Mono Mix Out.

Mono Mix Out

The Mono Mix Out XLR male jack provides a one-cable solution to users of subwoofers, tactile bass and throne shakers, and mono powered speakers. The A360 automatically mixes down the current stereo mix to mono, so the user need only connect a cable from the Mono Mix Out jack to the inputs of the next device.

✓ **NOTE** The A360 Master Volume must be up in order to hear the mono mix even if the only audio connection is via the XLR mono output.

A360 Modes

The A360 can be integrated into new or existing Aviom personal mixing systems along with A-16II and A-16R Personal Mixers, or it can be used in a system specifically designed to take advantage of the higher channel count that Pro16e A-Net offers. In order to maintain the unit's flexibility in a variety of contexts, the four-position mode switch is used.

The position of the mode switch will have an impact on Mix Presets created on the A360. See page 38 for more information about creating Mix Presets.

Mode Switch

The four-position mode switch on the rear of the A360 is used to select Pro16 or Pro16e A-Net operation. One mode is dedicated to Pro16, the remaining three to Pro16e.

From right to left the positions are:
- Pro16 Mode
- Default Mode
- Program Mode
- Custom Mode
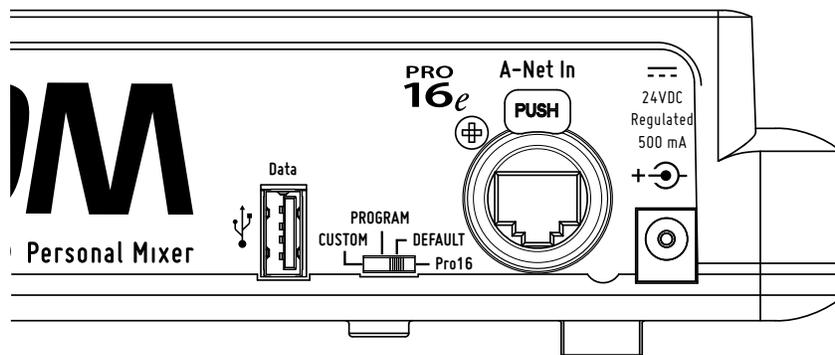
The Mode Switch has four settings: Pro16, Default, Program, and Custom.

Pro16 Mode

Set the mode switch to **Pro16** for systems with 16 or fewer channels when a single Pro16 input device is used. Channels are laid out on the A360 as they are on the A-16II and A-16R Personal Mixers. There is a one-to-one correspondence between the input device's channel patching assignment and the Personal Mixer's channels, and this channel order cannot be changed. Stereo links set on the system's input device appear as adjacent channels on all Personal Mixers.

The Dual Profile Channel may be used to mirror any mono channel or stereo channel pair. The One-Touch Ambience must use the onboard microphone.

Default Mode

Set the mode switch to **Default** when two or more input devices—up to four AN-16/i v.2 Input Modules, or one Pro16 input device (AN-16/i-M, AN-16/i or console card) with up to three AN-16/i v.2—are used to create a personal mixing system with more than 16 input channels.

In Default mode the A360 expects to receive the enhanced Pro16e A-Net packet and will assign channels that are stereo linked at the input device under a single A360 mix channel button. If a 16-channel Pro16 A-Net source is connected while the A360 is set to Default mode, the A360 will automatically detect the difference and will place the 16 channels one-to-one across the 16 channel buttons with stereo pairs appearing on adjacent buttons as described above for Pro16 mode.

In Default mode, channels are assigned to the A360 mix buttons in the default order (see the table that follows); the odd/even audio channels on the input devices are treated as stereo pairs. When the input device's stereo link switch is set for mono, only the odd (left) input of the pair is used and the A360 mix channel button is mono. With the stereo link switch at the input device set for stereo, the channels are a left/right pair, the corresponding A360 mix channel button is stereo and the Spread function becomes available.
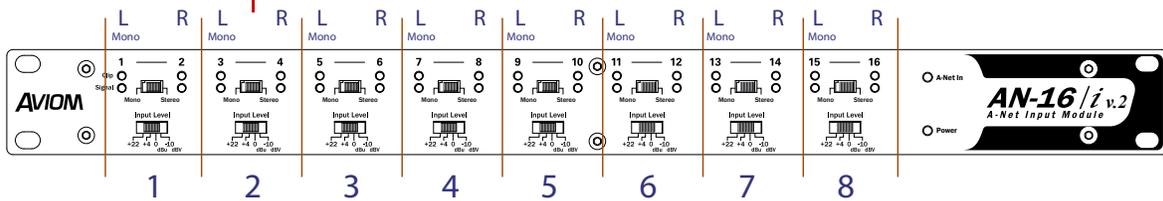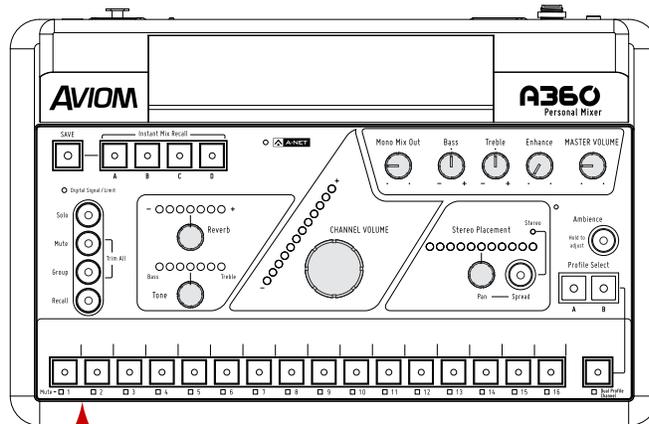
Each channel pair of an input module provides either a mono or stereo source for an A360 mix button, as determined by the Mono/Stereo link switch on the AN16/i v.2. When set to mono, the right side input is ignored by Pro16e devices unless custom mapping is used.

In Default mode the Dual Profile Channel may be used to mirror any mono channel or stereo channel pair and cannot be used as a 17th mix channel. The One-Touch Ambience must come from the onboard microphone.

✓ NOTE: The A360 must be set to Custom mode to use any non-default channel assignments.

How Stereo Links Work

When channels are stereo linked on an input module, both channels appear on the A360 as a stereo pair, using one mix channel button. The table shows the default mapping of 32 input sources to an A360.

AN-16/i v.2		Default A360 Channel	
Bank	Channel	If Stereo	If Mono
1-16	1	**1** *(left)*	**1**
	2	**1** *(right)*	*Ignored*
	3	**2** *(left)*	**2**
	4	**2** *(right)*	*Ignored*
	5	**3** *(left)*	**3**
	6	**3** *(right)*	*Ignored*
	7	**4** *(left)*	**4**
	8	**4** *(right)*	*Ignored*
	9	**5** *(left)*	**5**
	10	**5** *(right)*	*Ignored*
	11	**6** *(left)*	**6**
	12	**6** *(right)*	*Ignored*
	13	**7** *(left)*	**7**
	14	**7** *(right)*	*Ignored*
	15	**8** *(left)*	**8**
	16	**8** *(right)*	*Ignored*
17-32	1	**9** *(left)*	**9**
	2	**9** *(right)*	*Ignored*
	3	**10** *(left)*	**10**
	4	**10** *(right)*	*Ignored*
	5	**11** *(left)*	**11**
	6	**11** *(right)*	*Ignored*
	7	**12** *(left)*	**12**
	8	**12** *(right)*	*Ignored*
	9	**13** *(left)*	**13**
	10	**13** *(right)*	*Ignored*
	11	**14** *(left)*	**14**
	12	**14** *(right)*	*Ignored*
	13	**15** *(left)*	**15**
	14	**15** *(right)*	*Ignored*
	15	**16** *(left)*	**16**
	16	**16** *(right)*	*Ignored*

If the channels are *not* stereo linked, then only the odd (left) input module channel is utilized by the A360, and the even (right) input module channel is ignored (but may be used by A-16II mixers in the system or by A360 Personal Mixers that are running in Pro16 or Custom mode).

Program Mode

Setting the A360 mode switch to Program temporarily suspends all front-panel mix functions so that USB disk-based save and load operations can be performed.

The free A360 Channel Manager application (available from the Aviom website) is used to create and save mixer configurations as well as back up Mix Presets. Once saved, mixer configurations can be copied to a USB memory stick for loading into the A360 Personal Mixer. Configurations and user-created Mix Presets that are already loaded into an A360 can be saved to a USB device for backup or loading into other A360 Personal Mixers (see page 51).

Saving a configuration from the A360 Personal Mixer to the USB memory device copies the current channel configuration plus all Mix Presets. The 20 Mix Preset files in an A360 can be copied to a PC for backup, but cannot be edited.

✓ Note: The free A360 Channel Manager software must be used to map network channels to the A360 mix channel buttons. Custom mixer configuration can then be loaded from a USB memory stick into the A360.

Custom Mode

A custom channel map allows any network slot to be assigned to any A360 mix channel button; each A360 in a personal mixing system may be set independently, adding flexibility and customization for each user.
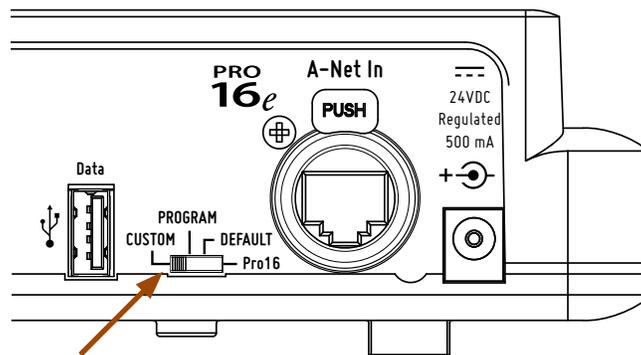
Place the mode switch in the Custom position to use channel mapping.

Moving the mode switch to Custom sets the A360 to use the custom channel map (created using the A360 Channel Manager software and loaded from a USB memory stick in Program Mode) for mixing.

In Custom mode, the Dual Profile Channel cannot be used to mirror another mix channel button; it is intended to be used as an independent mix channel. The One-Touch Ambience feature may use the onboard microphone or may be assigned to use any mono/stereo network channel, a feature which becomes especially powerful when ambient mics are set up in the performance space to allow performers to better interact with an audience. See page 15 for additional information about using the One-Touch Ambience feature.
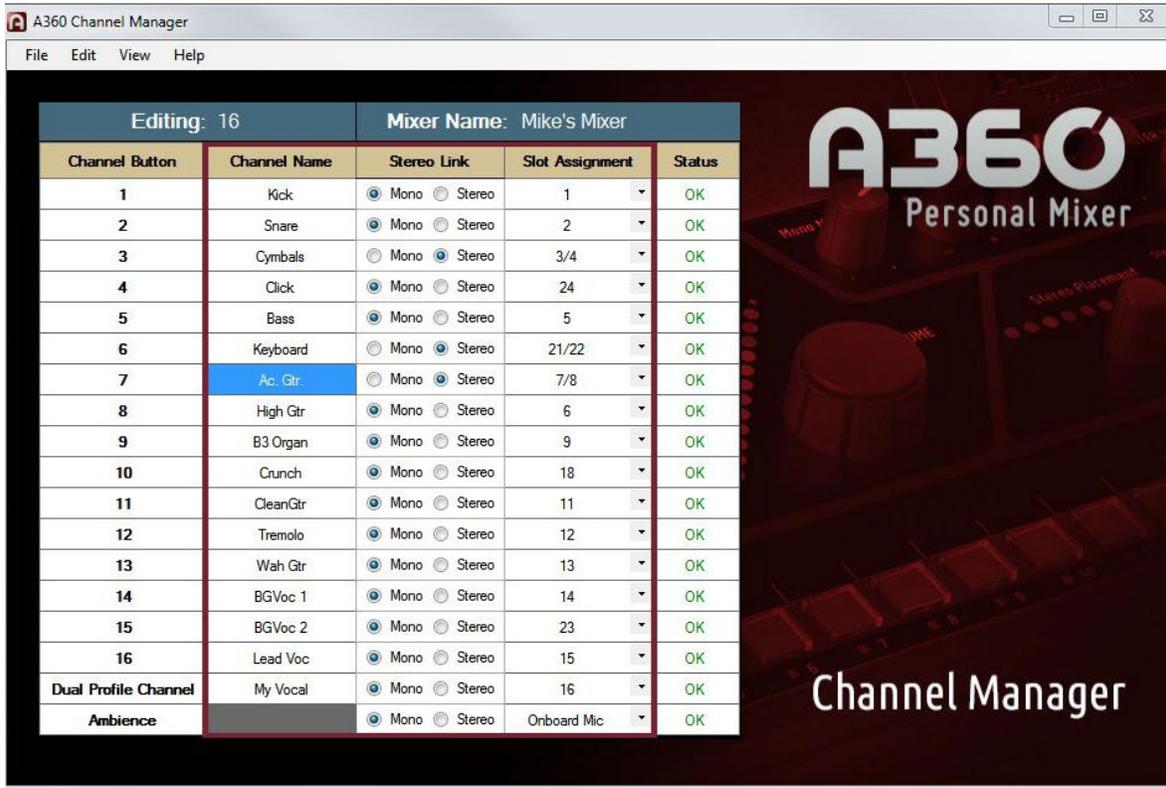
A custom channel configuration is shown in the A360 Channel Manager software.

USB Data Port

The A360's USB data port is designed to use a PC-formatted USB memory stick (thumb drive) to update its firmware and save/recall mixer configurations and Mix Presets. It is not designed to work with external hard drives or any other types of peripherals that connect via USB. See page 52 for information about creating and loading mixer configurations.

Saving a Mixer Configuration to a USB Device

Mix Presets created in an A360 may be saved to a USB memory device for backup or loading into another A360 Personal Mixer in the form of a mixer configuration. This allows a user's Mix Presets to be backed up to a computer or transferred to another A360 Personal Mixer.

A mixer configuration includes:
- the 16 standard Mix Presets stored in the mix channel button locations
- the 4 Mix Presets stored in the Instant Mix Recall locations
- custom channel mapping assignments for the 16 mix channels, Dual Profile Channel, and One-Touch Ambience buttons

To save the current A360 mixer configuration to a USB memory stick:
1. Insert a USB memory stick device into the USB port on the A360.
2. Place the A360 in **PROGRAM** mode using the rear-panel switch. All Reverb, Tone, Volume, Pan, and channel button LEDs go out; all mixing functions are disabled.
3. The **SAVE** and **RECALL** buttons start blinking.
4. Press the **SAVE** button; it lights solid and all mix channel buttons start blinking.
5. Select a channel button (1-16); the button number corresponds to the mixer configuration number that will be saved to the USB device.
6. The selected channel button's LED lights solid, all other channel button LEDs stop blinking.
7. Remove the USB memory stick.
8. Return the rear-panel mode switch to the desired position: choose the **CUSTOM** position to use a custom channel map, choose **DEFAULT** to use the standard Pro16e channel mapping, or choose **PRO16** to use the A360 with Pro16 channel mapping.

✓ **NOTE:** There is no warning if a mixer configuration will be overwritten when saving from the A360 to a USB device. Always back up your mixer configurations to avoid losing important data.

Loading a Mixer Configuration

A USB memory stick can hold up to 16 different mixer configurations, numbered 1 through 16, that have been created using the A360 Channel Manager software or saved directly from an A360 Personal Mixer. Custom channel maps and Mix Presets travel together as a single unit—the configuration file; the underlying components of a configuration cannot be individually loaded.

Mixer configurations make it easy to copy Mix Presets from one A360 to another. They are also used to assign a unique set of network slots for each performer and then quickly load those custom channel maps into each A360 Personal Mixer in a personal mixing system.

To load one of the mixer configurations from a USB memory stick into an A360:
1. Insert a USB memory device into the USB port on the A360.
2. Place the A360 in PROGRAM mode using the rear-panel switch. All Reverb, Tone, Volume, Pan, and channel button LEDs go out; all mixing functions are disabled.
3. The SAVE and RECALL buttons start blinking.
4. Press the RECALL button; it lights solid and all mix channel buttons start blinking.
5. Select the channel button (1-16) that corresponds to the mixer configuration you wish to load. That channel button's LED lights solid, all other channel button LEDs stop blinking.
6. Set the rear-panel mode switch in the desired position: PRO16, DEFAULT, or CUSTOM. You must choose the CUSTOM position to use channel mapping created with A360 Channel Manager.
7. Remove the USB memory stick.

✓ NOTE: When a configuration is loaded into the A360, any previously loaded channel map is replaced; Mix Presets stored with the configuration are also loaded and will replace any user-created mixes saved in the A360. Always back up important data in a Personal Mixer before loading configurations.

Error Warnings While Loading and Saving

While recalling a configuration, if you select a mix channel button that does not correspond to a valid mixer configuration file stored on the USB device, the RECALL button will blink as an error warning. The A360 will then revert to blinking the SAVE and RECALL buttons as described above. As in the steps above, press the RECALL button and select a different channel button.

If you place the mode switch into the PROGRAM position when no USB device is connected, or remove the USB device prior to performing a save or load operation, the A-Net LED will blink as an error indication. Simply reconnect the USB device to continue.

Updating Firmware

The A360 Personal Mixer can be updated to add new features and functionality. During a firmware update the mixing and audio output portions of the A360 user interface are temporarily disabled. The process takes only a few minutes per device; the actual amount of time for a firmware update will vary based on the complexity of the current firmware file being applied. Firmware updates are available from the Aviom website (at www.aviom.com).

A USB memory stick formatted for FAT32 (standard PC formatting) is required. USB devices formatted with Mac NTFS formatting are not supported. USB devices partitioned with PC and Mac volumes may be used; the Mac partition will be ignored.

Once a firmware update has been downloaded from the Aviom website, extract the files from the .zip archive and copy the contents to the root level of the USB memory stick (the extracted archive will have all files in a folder named **Aviom**).

✓ **Note:** Firmware updates are delivered with a specific folder structure in place which must remain intact in order to work. Do not move, re-name, or otherwise alter the files delivered with the firmware update.

To update the A360 Personal Mixer firmware:
1. Start with the power to the A360 off. (If powering the unit over the Cat-5 cable, turn off the A-Net distributor or remove the Cat-5 cable from the Personal Mixer's A-Net In port).
2. Plug the USB device into the A360 Personal Mixer's USB port.
3. Simultaneously hold the **Save** and **Solo** buttons while powering up the A360.
4. The Channel Volume LEDs will light in an alternating pattern to indicate that the firmware update process has started.
5. Release the **Save** and **Solo** buttons.
6. After a few seconds the channel button LEDs will be used to display a progress bar as the firmware update is applied.
7. If further firmware update stages are included with a particular update, the Channel Volume LEDs are used to indicate the progress of this stage of the update.
8. Once the new firmware is installed and verified, the LEDs will stop blinking, and the A360 will return to its normal state, ready to be used. The audio outputs are available again.
9. The USB device can be safely removed.

✓ **Warning:**
Do not press any of the user interface buttons, remove the USB stick, or turn off the A360 Personal Mixer while its firmware is being updated.

Firmware Update Error Warnings

Warning	Description
After pressing the **SAVE** and **SOLO** buttons, the channel select button LEDs light briefly, and the Personal Mixer returns to the pre-update (normal mixing) state.	The A360's firmware is up to date; the current version of the firmware is already installed.
After pressing the **SAVE** and **SOLO** buttons, the Tone LEDs light momentarily, and the Personal Mixer returns to the pre-update (normal mixing) state.	No USB drive is connected to the USB port.
After pressing the **SAVE** and **SOLO** buttons, the Reverb LEDs light momentarily, and the Personal Mixer returns to the pre-update (normal mixing) state.	The firmware update file is missing; make sure that the firmware archive was extracted correctly and copied exactly to the root level of the USB drive.

A-Net In

The Cat-5 A-Net In port is fitted with a Neutrik® EtherCon® RJ45, and accepts either Pro16 or Pro16e A-Net data. Cables used with the A360 can be the standard Cat-5e UTP cable with RJ45 ends commonly used with computer systems or those fitted with the heavy-duty locking Neutrik EtherCon plug.

When connected to an A-Net distributor such as the D800 or A-16D Pro, the A360 also receives DC power over the same Cat-5e data cable. In this case an external DC power supply is not required.

✓ **NOTE:** When the A360 is connected to an A-Net distributor, the type of A-Net received (Pro16 or Pro16e) is dependent on the input device that is supplying A-Net to the distributor. Both data types are compatible with the A-Net distributors.
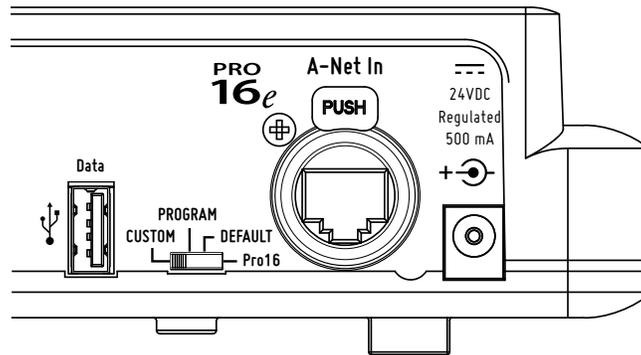
A-Net In and DC power connections

DC Power

The DC Power jack accepts a 24VDC power supply when the A360 is not being powered over the Cat-5 cable from an A-Net distributor. Use only an approved 24VDC, regulated 500mA supply such as the optional Aviom PS-120 Power Supply.

Personal Mixing System Setup

This section explains how the A360 Personal Mixer integrates with other Pro16 devices (sold by Aviom or third-party partners) to create a personal mixing system. See the detailed User Guides that came with the Aviom products mentioned in this section for complete information about their use, features, and setup.

Adding the A360 to an Existing System

The A360 Personal Mixer can be added to existing 16-channel personal mixing systems that use the A320 Personal Mixer, A-16II Personal Mixer (and/or the rack-mount version, the A-16R). Most of these systems use the same basic layout—an input device (analog or a digital console card) is used to generate an A-Net digital signal which is connected to Personal Mixers either in a daisy chain or with the addition of an A-Net Distributor such as the A-16D Pro for parallel connections and power over A-Net.

In addition to Pro16 analog devices and console cards, the Pro64 ASI A-Net Systems Interface may be substituted for the input devices seen in the diagrams that follow. Any of the ASI's four Pro16 A-Net outputs may be used.

A360 rear panel with the mode switch set to Pro16

Daisy Chain Connections

In a daisy chained Pro16 personal mixing system, the A-Net signal generated by the input module or console card is passed from one Personal Mixer to the next, using the combination of the A-Net In and A-Net Out jacks found on the Personal Mixers. Personal Mixers are powered locally with a DC power supply.

The rear-panel mode switch on the A360 should be set to **Pro16** when it is used with the A-16II and A-16R in a Pro16 personal mixing system with 16 or fewer channels. See page 45 for more information about the mode switch and its use.

Analog input module or digital console card
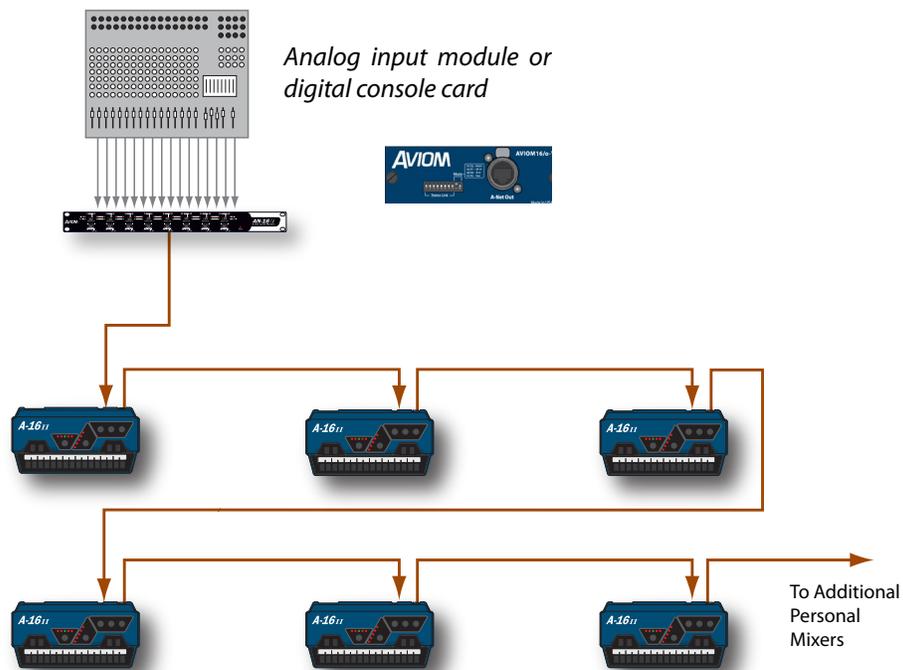
A typical daisy chained Pro16 personal mixing system with six A-16II mixers is shown.

One A360 Personal Mixer may be added to a daisy chain personal mixing system, but only at the end of the daisy chain—the A360 has only an **A-Net In** port and *must* be the last device in a daisy chain. Adding more than one A360 Personal Mixer to such a system requires the addition of an A-Net Distributor.
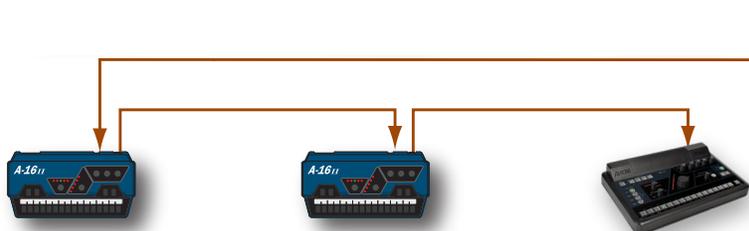
The A360 must be the last device in a daisy chain.

If an A360 Personal Mixer is connected in a daisy chain, an external power supply such as the PS-120 Power Supply is required. No power supply ships with the A360.

57

Parallel Connections

An A-Net Distributor simplifies the connection or expansion of an existing Pro16 personal mixing system with A360 Personal Mixers. As with the daisy chained system, a single analog input module or digital console card is used to generate a 16-channel A-Net signal that is distributed to the Personal Mixers.

Using one or more A-Net Distributors allows any number of A360 Personal Mixers to be integrated into a personal mixing system along with A320, A-16II and A-16R Personal Mixers. As with the daisy chain system, the rear-panel mode switch on the A360 should be set to **Pro16** when it is used with a Pro16 personal mixing system made up of 16 or fewer input channels.

✓ **Note:** In the diagrams that follow, any compatible A-Net Distributor—including the D800, D800-Dante, D400, or D400-Dante—may be substituted for the distributor shown.

Analog input module or digital console card
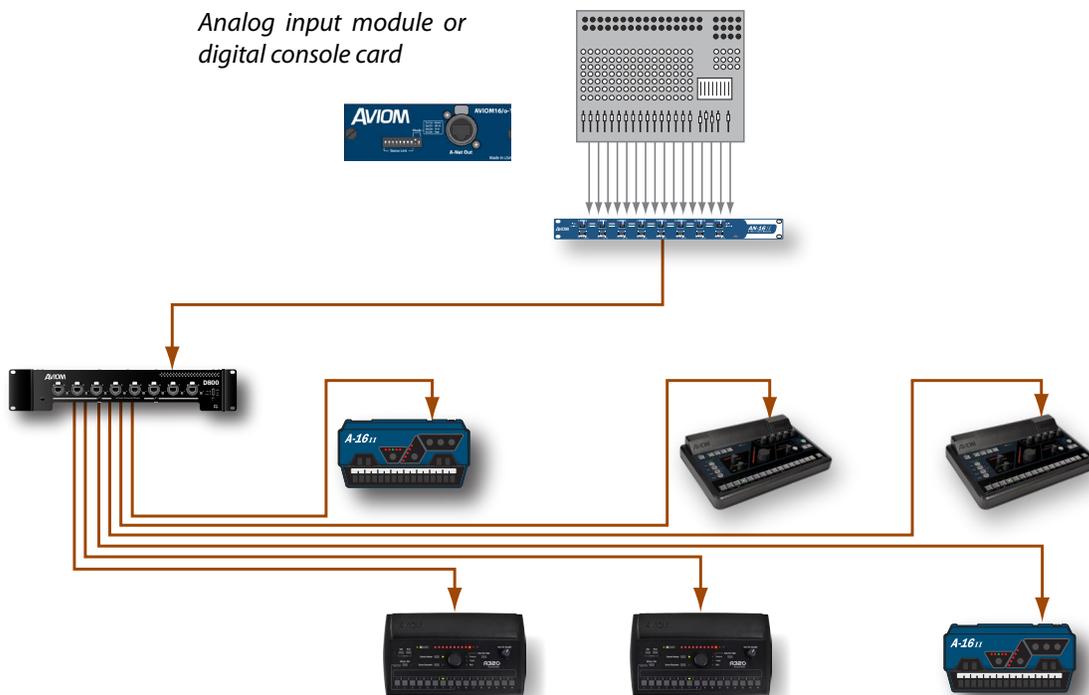
An A-Net Distributor allows Personal Mixers to be connected in parallel.

The A360 Personal Mixer can be powered over the Cat-5 cable when connected to an A-Net Distributor.

Pro16e Personal Mixing Systems

The A360 Personal Mixer can make use of the enhanced version of A-Net, Pro16e, which allows up to 64 audio slots to be included in the network pool by using up to four input devices. Each A360 in a personal mixing system may be programmed to use any combination of these network slots. The A360 Channel Manager software is used to assign network slots to the individual mix channel buttons of an A360. Custom channel configurations can be loaded into the A360 from a USB memory stick. The A360 uses its CUSTOM mode to access channel mappings other than the default layout. See page 49 for information about mapping channels.
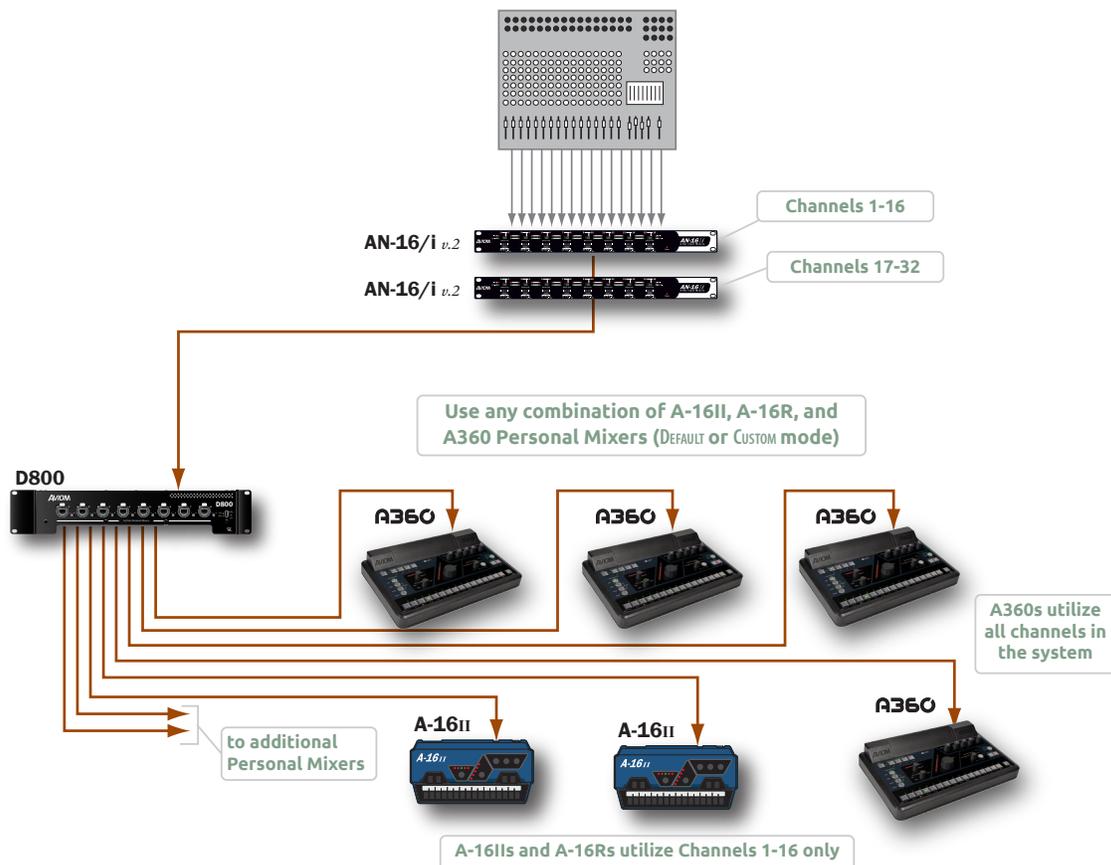
A 32-input personal mixing system with A-16II and A360 Personal Mixers

When using multiple input devices for inputs to a personal mixing system, each device provides one 16-channel bank of slots to the network. The Slot Range switches on the rear panel of the AN-16/i v.2 control the bank assignment. Up to four input devices may be used to create a pool of 64 channels.

A360 PERSONAL MIXER USER GUIDE

Slot Range Setup

Each input device in a Pro16e-based personal mixing system supplies one bank of 16 channels to the network. The Slot Range switches on the AN-16/i v.2 are used to set the assignment for each; the physical location of the device within the daisy chain does not matter as long as the Slot Range switch settings are correct. Each input module is daisy chained, connecting a Cat-5 cable from its **A-Net Out** to the **A-Net In** of the next input device in the chain.
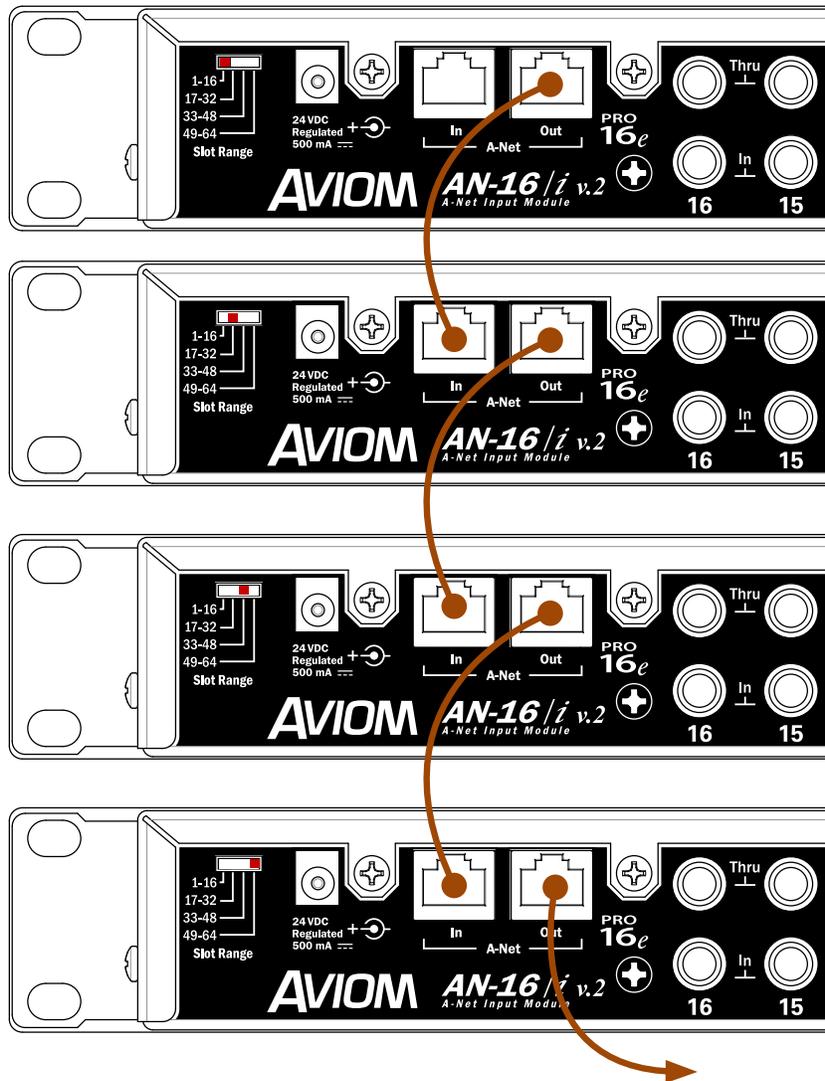
Slot Range switches for each input device in a 64-input system are shown. A legacy Pro16 device may be substituted for the first bank of 16 channels.

Connect the **A-Net Out** of the last input device in the chain to the **A-Net In** of the A-Net Distributor. The A360 Personal Mixers are then connected to the distributor's **A-Net Out** ports.

A legacy Pro16 device may be substituted for the first bank of 16 channels in a daisy chain of input devices. It will automatically default to supplying the first 16 slots to the network pool. See page 62.

Channels 1-16

Channels 17-32

Channels 33-48

Channels 49-64

AN-16/i *v.2*

AN-16/i *v.2*

AN-16/i *v.2*

AN-16/i *v.2*

Select A360 mix channels from all
64 network channels (CUSTOM mode)

D800

A360

A360

A360

A360

A-16D PRO

A360

A-16II

A320

A320

A-16IIs and A-16Rs
utilize Channels
1-16 only

A320s use channels
1-32 of the network

to additional
Personal Mixers
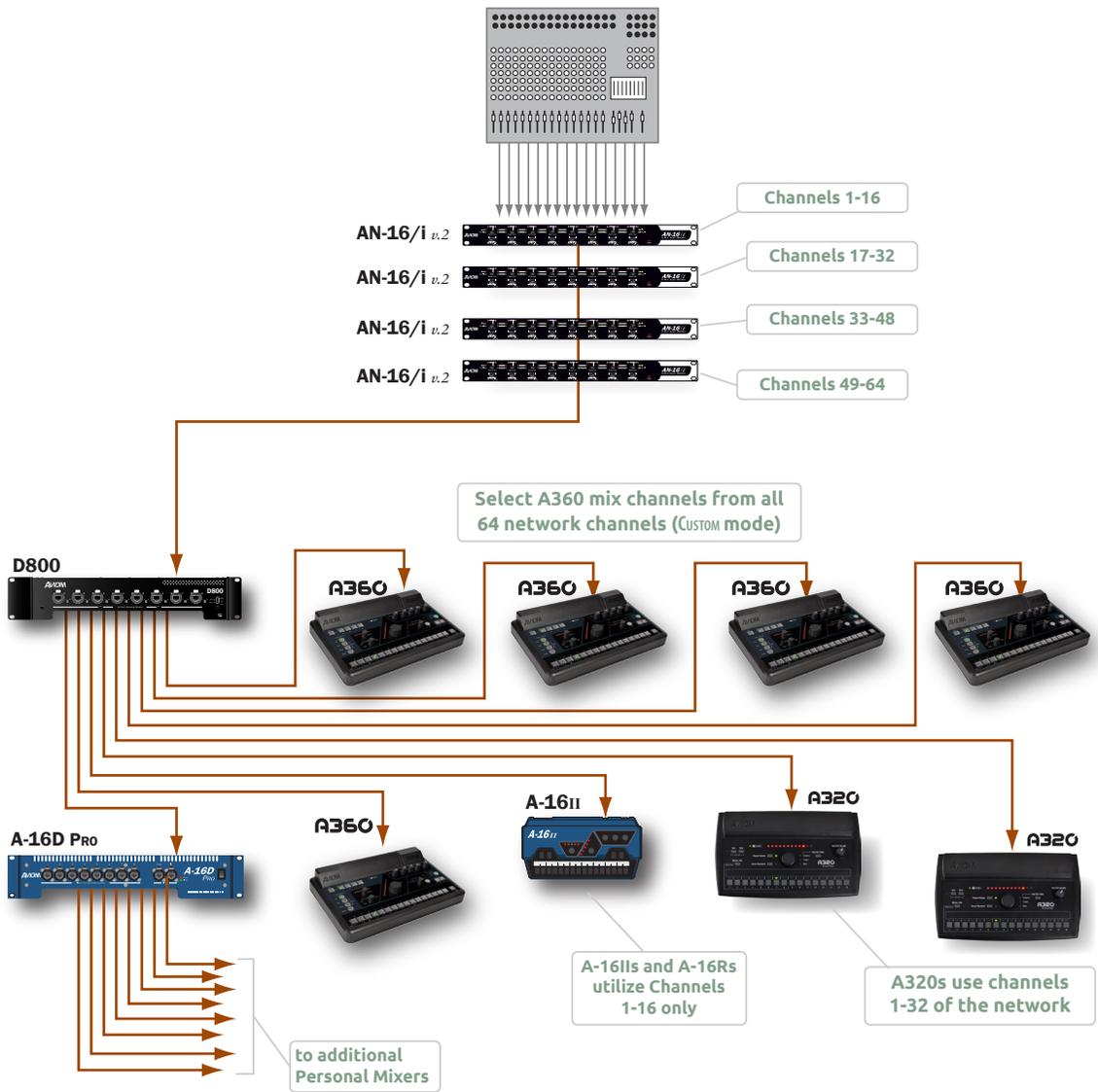
A 64-input system using two A-Net Distributors is shown.

Legacy products such as the A-16II or A-16R Personal Mixers may be used in a Pro16e-based system, but
note that they can only access the first 16 network slots.

Using Legacy Input Devices

One legacy input device or Pro16 console card may be used in a multiple input device configuration—it will default to supplying the first 16 slots to the network and must be connected to the **A-Nᴇᴛ Iɴ** of the first Pro16e device in the system. The Pro16e input devices (such as the AN-16/i v.2) should be set to Slot Range 17 and above for this application.
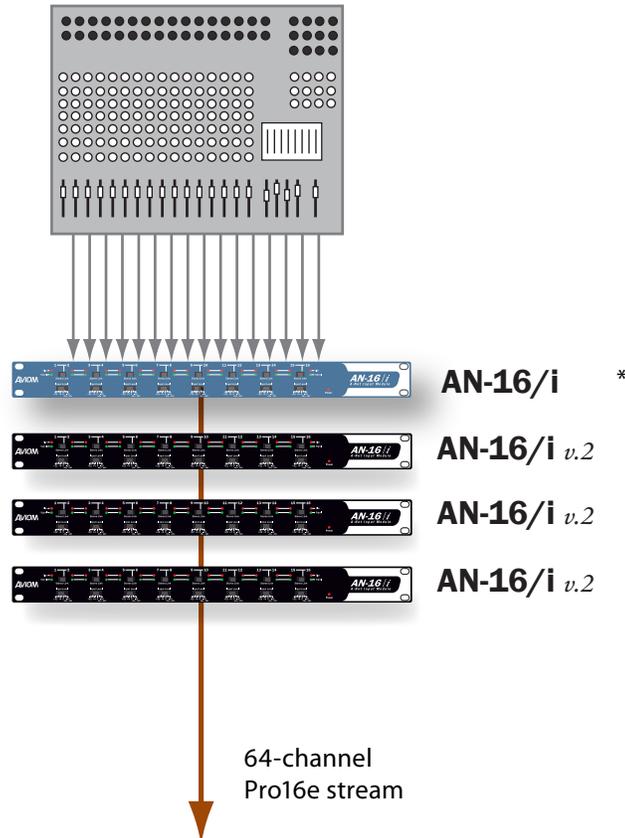
One legacy AN-16/i and three AN-16/i v.2 Input Modules can provide up to 64 audio sources for A360 Personal Mixers to select from.

A Pro16 device—original AN-16/i, AN-16/i-M, Y1 A-Net card, ASI, or a third-party console card—may be substituted for the first AN-16/i v.2 in a daisy chain of input devices; a legacy device automatically defaults to providing Slot Range 1-16 to the network.

Connecting Monitoring Devices

Headphones, wired in-ear monitors, wireless in-ear transmitter systems, powered speakers, subwoofers, and tactile bass shakers can be connected to the A360 Personal Mixer separately or in combination. This section details the connection of these devices to the A360's outputs.

The A360 has 1/4-inch and 1/8-inch stereo and XLR mono mix outputs available.

Connecting to the Stereo Mix Output

The A360 has a pair of jacks—1/4-inch and 1/8-inch TRS—dedicated to the stereo mix coming from the Personal Mixer. Both jacks are always active.

Headphones and Earbuds

Connect headphones or wired earbuds to the A360. For best performance, choose low impedance headphones or earbuds whenever possible. High impedance devices will not harm the A360, but note that the mix output level may be lower with these devices.
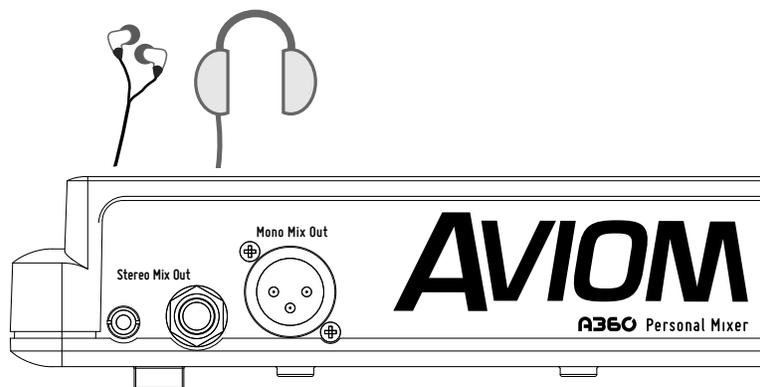
Headphones or earbuds are connected to the Stereo Mix Out jack.

The 1/4-inch and 1/8-inch outputs may be used simultaneously. See page 44 for additional information.

Stereo Wireless In-Ear Systems

The A360's Stereo Mix Out may be connected to the left/right inputs of a wireless transmitter used for in-ear monitoring. A Y-cable that splits the TRS stereo output to a pair of TS mono left and right outputs is required. Note that the connection from the left and right TS cables is unbalanced. If the inputs to the wireless transmitter are XLR only, a special cable may need to be made. Consult the transmitter's documentation for information about properly connecting unbalanced signals to its XLR inputs.
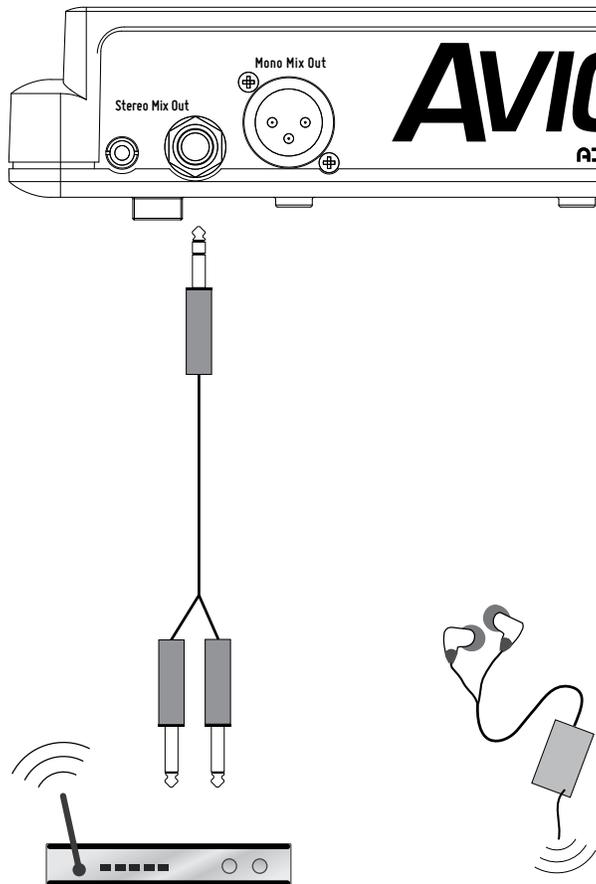
The Stereo Mix Out can be connected to a wireless in-ear transmitter with a Y-cable.

If you need to create a custom adapter cable, note that the TRS tip connector carries the left audio signal, the ring carries the right signal, and the sleeve provides ground for both. The left and right signals are unbalanced in this case.

Stereo Speakers

The Stereo Mix Out may be connected to a set of powered stereo monitor speakers using a Y-cable that splits the TRS stereo output to a pair of TS mono left and right outputs.
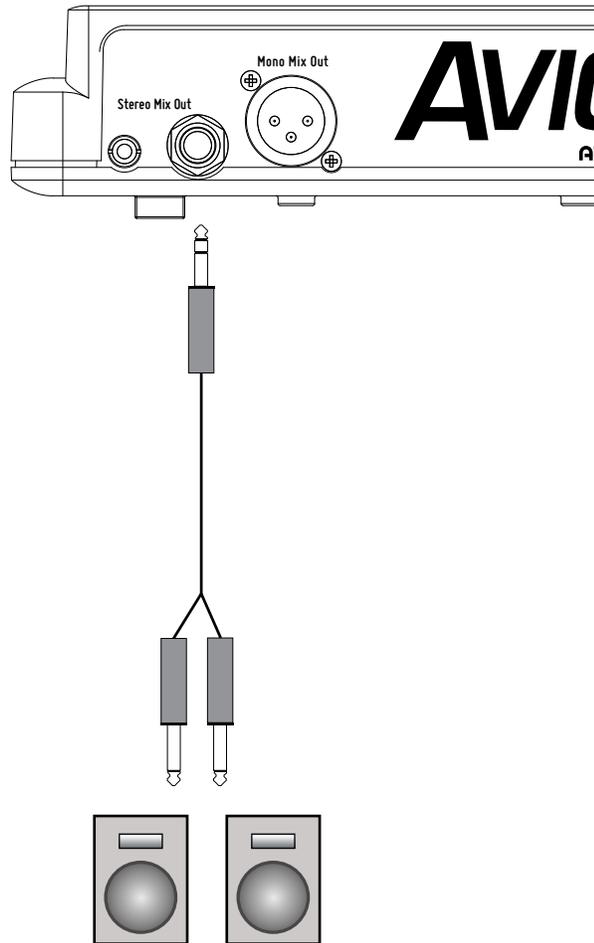
A Y-cable is required to connect the A360 to stereo powered speakers.

If the powered speakers have XLR inputs, a custom cable may be required. Check the speaker's documentation for information about properly connecting the unbalanced left and right signals from the A360 Stereo Mix Out to the balanced inputs of the powered speakers.

Connecting to the Mono Mix Out

In addition to the 1/4-inch and 1/8-inch Stereo Mix Outs, the A360 has a dedicated Mono Mix Out that is always available. The Mono Mix Out can be used alone—connected to a powered wedge, for example—or in conjunction with a stereo monitoring device such as headphones where the mono out is connected to a subwoofer or tactile bass shaker device.

✓ **Note:** The Mono Mix Out level is determined by the A360's Master Volume knob, which must be up to generate a mono mix even when nothing is connected to the Stereo Mix Out jacks.

Master Volume must be up to feed the Mono Mix output.

Mono Speakers

The A360 Personal Mixer's Mono Mix Out is ideal when you need to connect the A360 to a mono device such as a powered speaker or wedge. The balanced line-level XLR output supplies a mono version of the mix being created on the A360, even when the stereo outputs are also being used.
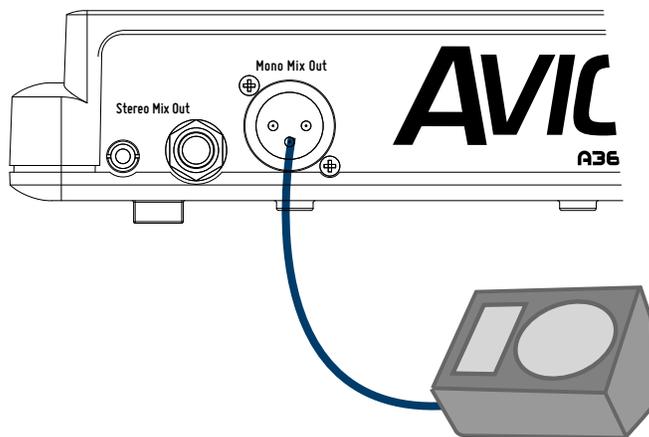
The mono out is connected to a powered wedge's input with an XLR cable.

No editing is required to create the mono output. The A360 automatically sums stereo channel and pan information to mono, even if the inputs have been stereo linked at the input modules.

Subwoofers

When a subwoofer is used to supplement a performer's monitor mix, the Stereo Mix Out and Mono Mix Out are used simultaneously. Connect wired earbuds, headphones, or a wireless in-ear transmitter system to the **STEREO MIX OUT** jack, and then connect the **MONO MIX OUT** jack to the line-level input of the subwoofer with an XLR cable.
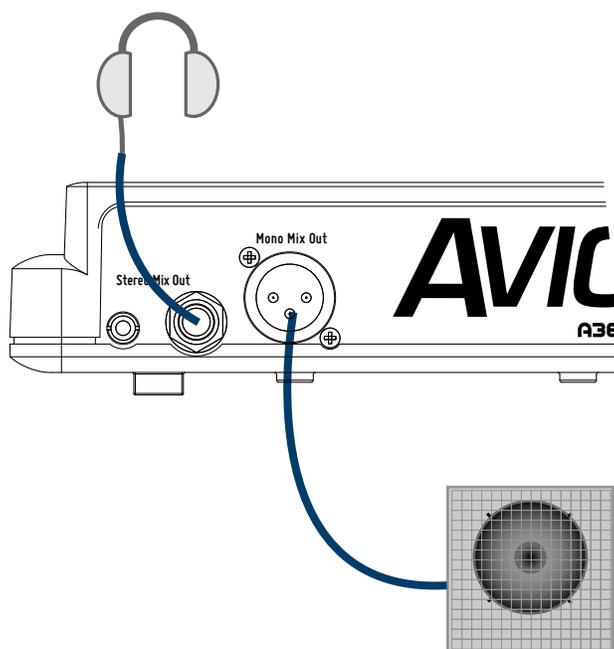
Headphones and a subwoofer are connected to the A360.

Tactile Shaker Devices

In addition to subwoofers, which are speakers designed to output primarily low frequencies, there is another category of low frequency devices designed to supplement a mix and enhance the listening and mixing experience of the user. These tactile devices are known as bass shakers, butt kickers, or throne shakers depending on how they are implemented.

Typically, the frequency range of these devices is restricted to 500Hz and below, so it is most likely they will be used in conjunction with headphones or earbuds. The Stereo Mix Out and the Mono Mix Out jacks of the A360 will be used simultaneously in this case.

Connect earbuds or headphones to the **Stereo Mix Out**; connect an XLR cable from the **Mono Mix Out** of the A360 to the input of the bass shaker device. An adapter cable may be required if the shaker device cannot accept a line-level balanced XLR signal.
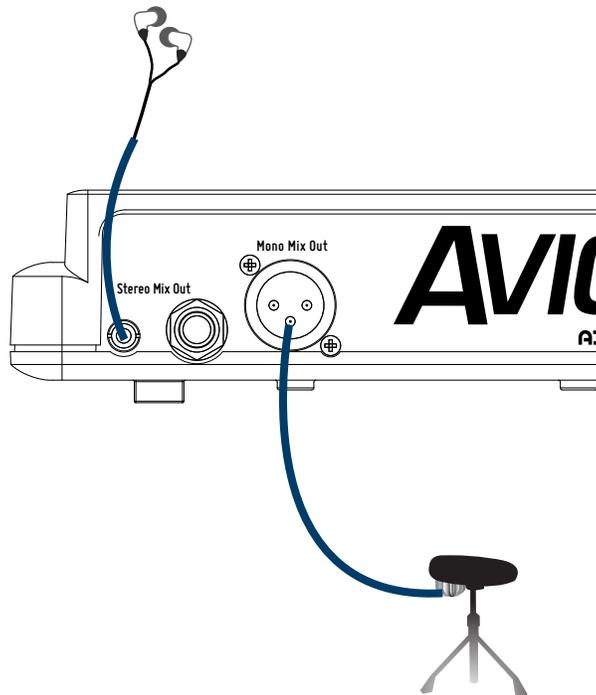
The A360 is shown connected to earbuds plus a drum throne shaker device.

As when using the mono output alone, the **Master Volume** knob on the A360 determines how loud the Mono Mix Out is in relation to the stereo mix output.

Network Mix Back

The A360 Personal Mixer offers a special feature—Network Mix Back—that allows its stereo mix to be sent back through the Cat-5 cable to a D800 or D800-Dante A-Net Distributor. The D800 products have a special port labeled Mixes Out that can be used with an AN-16/o v.4 Output Module to simplify the connection to wireless in-ear transmitter systems. The A360 can then be used as a remote controller for the performer's mix without connecting earbuds or headphones to the A360.

One D800 and one AN-16/o v.4 Output Module can provide stereo mixes for up to eight users' in-ear transmitters. The stereo mixes can also be patched directly into a Dante network when using the D800-Dante A-Net Distributor, eliminating the need for the AN-16/o v.4 and the analog cabling. See the example below.
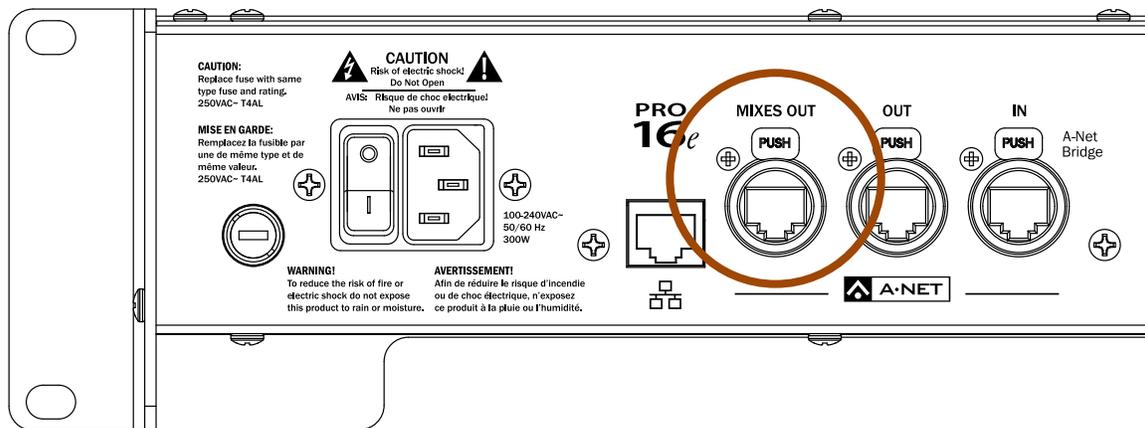
Mixes Out on the D800

To use Network Mix Back the front panel mode switches on the D800 must be set to the bidirectional position (**II**) for each A360 that will use the feature. Each of the eight A-Net ports on the D800 or D800-Dante can provide one stereo mix from an A360 Personal Mixer to the **MIXES OUT** port.

The stereo mix from an A360 is automatically assigned to a pair of network channels that appear at the **MIXES OUT** port; channels are mapped to the connected output device as seen in the table below.

D800 Port	Mixes Out Channels
1	1-2
2	3-4
3	5-6
4	7-8
5	9-10
6	11-12
7	13-14
8	15-16

Analog Cabling

Connect the **MIXES OUT** port from the D800 to **A-NET IN** on the AN-16/o v.4 Output Module with a Cat-5 cable. Analog connections for the inputs to the wireless transmitter units are available on two DB25 multipin connectors on the AN-16/o v.4 (wired to the Tascam analog standard).
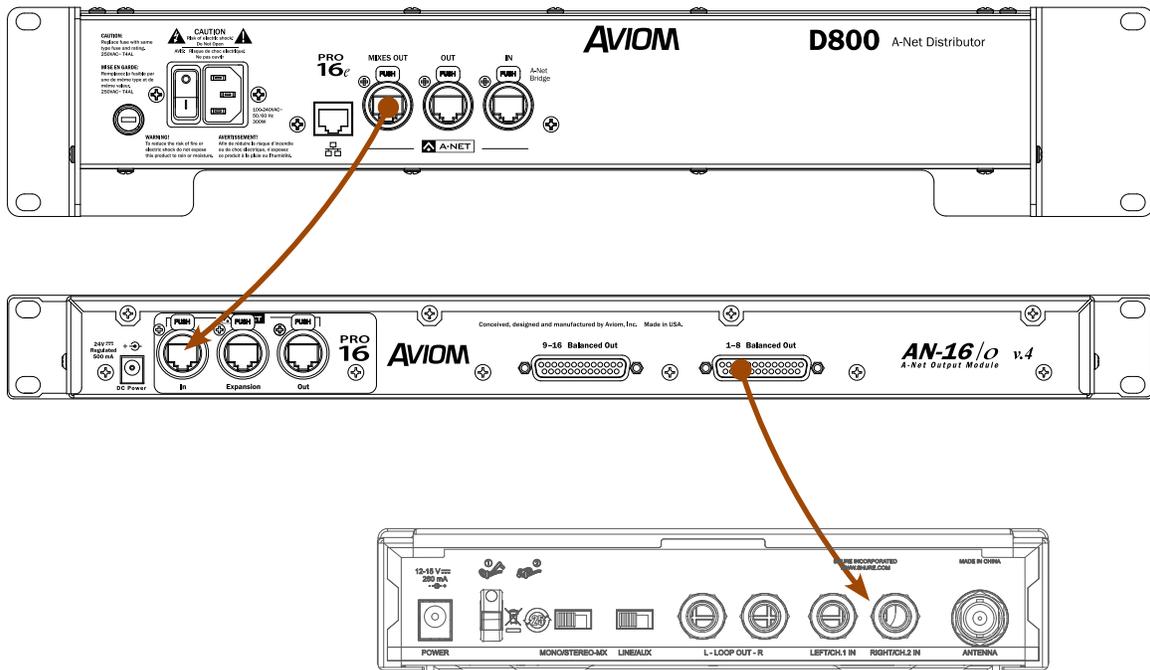
The Mixes Out port on a D800 connects to A-Net In on the AN-16/o v.4. Up to eight stereo mixes can be connected to the inputs of wireless in-ear transmitters from the AN-16/o v.4 multipin analog outputs.

Dante Patching

The eight Network Mix Back stereo mixes from the A360 Personal Mixers are also available in the Dante stream as D800 transmit channels 1-16 when using the D800-Dante A-Net Distributor. This allows you to route the signals into Dante-enabled consoles, processors, etc. using the Dante Controller routing software. All patching is done in the digital domain.
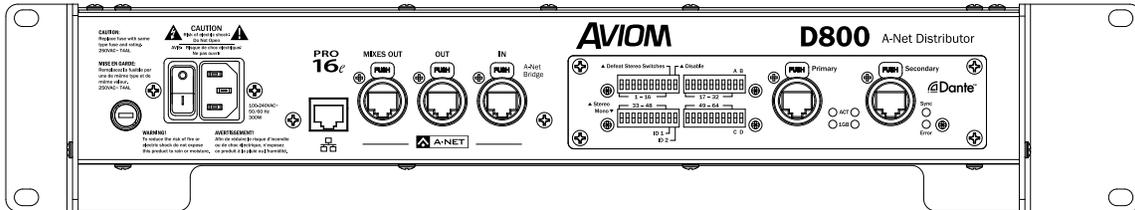
D800-Dante A-Net Distributor rear panel
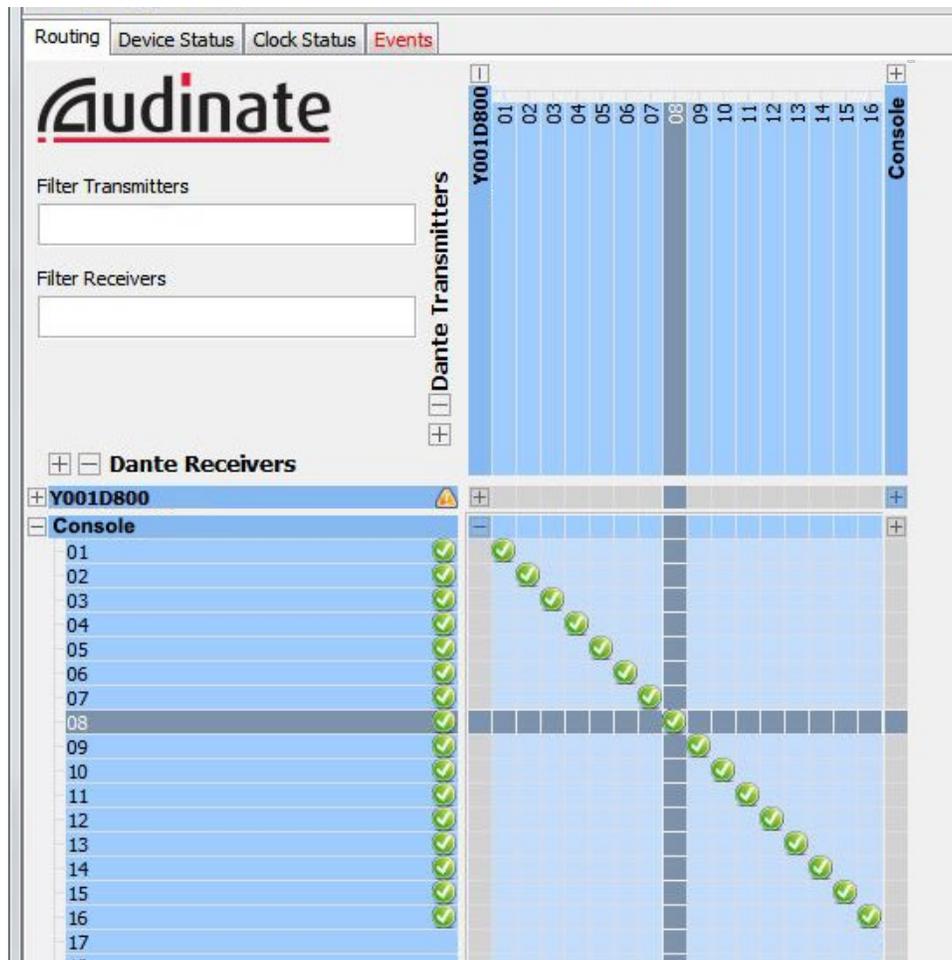
Dante Controller allows the Mixes Out channels to be routed to any device in the Dante network.

Specifications

Audio Outputs	1/4" TRS stereo, headphone or line level; 1/8" TRS stereo, headphone or line level; XLR balanced mono, line level
Stereo Mix Outputs, Headphone/Line	Tip: Audio Left; Ring: Audio Right; Sleeve: Ground
Mono Mix Output	Pin 2: Hot, Pin 3: Cold; Pin 1: Ground; impedance balanced
A-Net I/O	1 A-Net In, Neutrik EtherCon RJ45 connector; Supports Pro16 and Pro16e
D/A Conversion	44.1/48kHz, 24-bit
Stereo Operation	Stereo Link, per channel pair; Set at the input module; Variable pan per mono channel or pan/spread per stereo channel pair
USB Storage	Save/load mix configuration data, mix presets; firmware updates
Headphone Output	1.0 watt maximum at 100 ohms divided between both channels
Headphone Output Impedance	32 ohms
Line Output Impedance	226 ohms
Freq. Response	2-22kHz +0.2dB/-3dB
THD +N	< 0.003%
Signal to Noise (unweighted)	-106dB (measured with zero data into all channels)
Latency	0.880 msec (measured from analog input to analog output)
A-Net Cables	Use unshielded Cat-5e UTP (or better) cable
A-Net Cable Length	400 feet (122 m)
A-Net Pro16e Protocol	Supports original Pro16 16-channel data; Supports Power Over A-Net
Optional Power Supply Input Voltage Output Voltage Plug Size	External, DC, universal switching type 100-240 volts, 50/60Hz 24 VDC, 0.5 amp 2 mm
Dimensions	11" (279.4 mm) wide x 6.9" (175.26 mm) deep; 1.835" (46.61 mm) high
Weight	3.4 lb. (1.54 kg)
Options	MT-1a Mic Stand Mount (uses 6-32 1/4-inch screws); EB-1 Extension Bracket; PS-120 Power Supply

Dimensions

A360 PERSONAL MIXER USER GUIDE
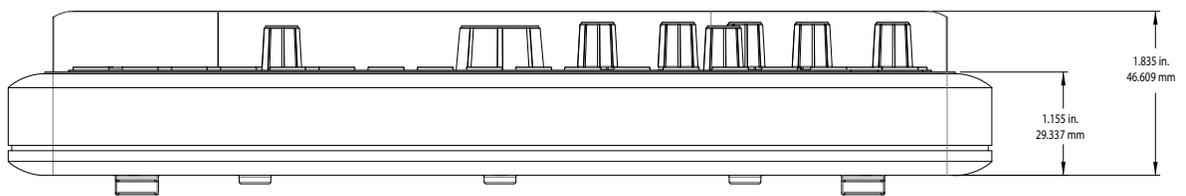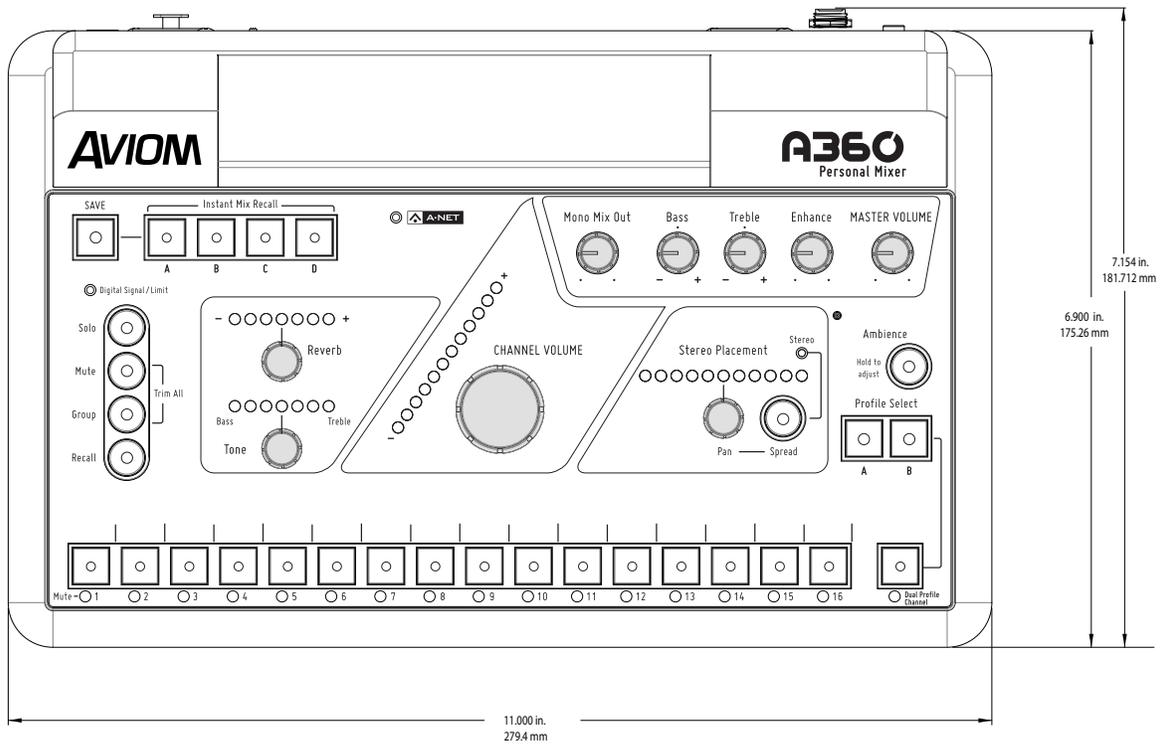
Mixer Label

Use this template as a starting point for creating custom Personal Mixer labels for the A360. It is shown actual size.

0.5607 in.
14.2418 mm

8.7639 in.
222.603 mm

0.539 in.
13.69 mm

16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
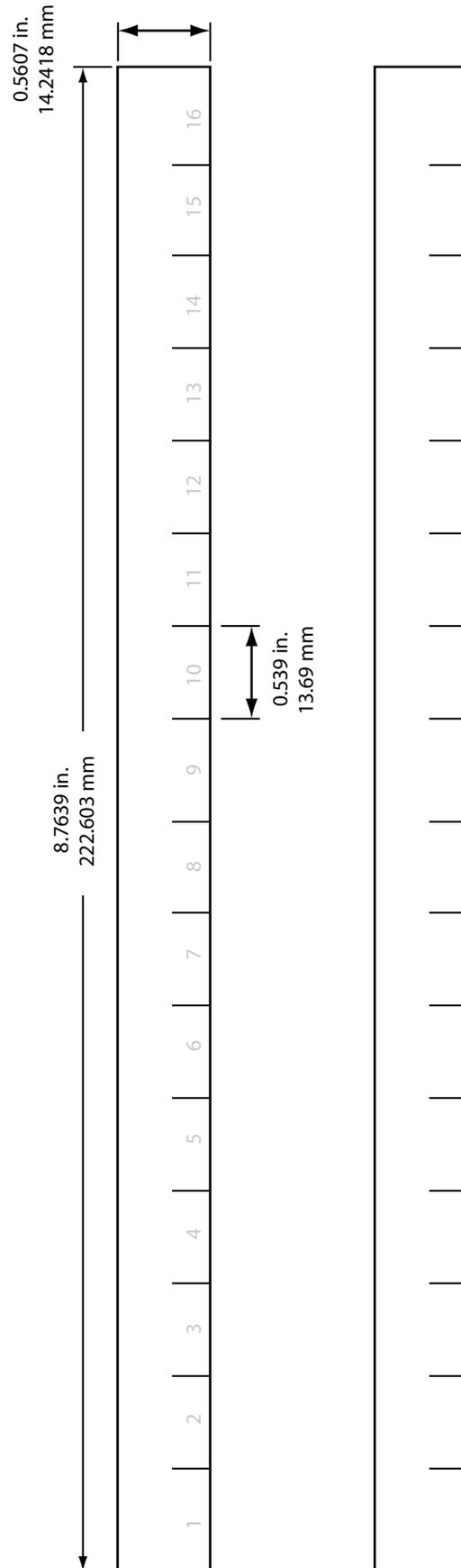
Cat-5 Cable Pinout

The tables below detail the two wiring pinout variations for Cat-5 cables. When making custom cables, either pinout can be used, but both ends of a cable must use the same wiring pattern.

T568A

RJ45 Pin	Wire Color	
1	White/Green	
2	Green	
3	White/Orange	
4	Blue	
5	White/Blue	
6	Orange	
7	White/Brown	
8	Brown	

T568B

RJ45 Pin	Wire Color	
1	White/Orange	
2	Orange	
3	White/Green	
4	Blue	
5	White/Blue	
6	Green	
7	White/Brown	
8	Brown	

Index

Symbols

A

B

M

N

O

P

R

S

X

XLR balanced 72
XLR cable 67, 68
XLR input 64
XLR mono out 34, 43, 45
XLR output 66
X/Y stereo pair
    ambient mics 18

Y

Y1 A-Net Card 4, 23, 62
Yamaha 23
Y-cable 44, 64, 65

Z

zero
    mic level 16
zero a mix 41

Warranty Registration

Please take a moment to fill in this warranty registration form.

Return it to Aviom via mail or fax. All information will be kept confidential.

Model _____   Product Serial Number _____

Model _____   Product Serial Number _____

Model _____   Product Serial Number _____

Model _____   Product Serial Number _____

Date Purchased _____

Dealer Name _____

Dealer Location _____

_____

Your Name _____

Address _____

Address _____

City _____

State/Province _____

Zip/Postal Code _____

Country _____

Email Address _____

Fax this form to Aviom at +1 610-738-9950

AVIOM®