



CS-DUO USER GUIDE

Version 1.8
January 2023



1266 Park Road
Chanhassen, MN 55317
952-401-7700
support@digitalaudio.com
www.digitalaudio.com

SAFETY INSTRUCTIONS

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. CONTACT DIGITAL AUDIO LABS FOR SERVICING.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated and/or potentially dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



POWER CORD NOTICE FOR INTERNATIONAL OPERATION

Please call Digital Audio Labs Support at 952-401-7700.

IMPORTANT SAFETY INSTRUCTIONS

1. Read and understand this entire manual.
2. Keep this manual available for reference.
3. Heed all warnings and precautions in this manual and notices marked on the product.
4. Do not use this product near water or damp environments.
5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
6. Provide for proper airflow around product. Do not install near products that produce high levels of heat. Do not expose the unit to direct sun light or heating units as the internal components' temperature may rise and shorten the life of the components.
7. 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.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they connect to the product. Do not use the unit if the electrical power cord is frayed or broken.
9. Only use attachments/accessories specified by the manufacturer.
10. Unplug this product during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel. There are no user serviceable components inside the product.
12. The product shall not be exposed to moisture. Do not touch the unit with wet hands. Do not handle the unit or power cord when your hands are wet or damp.
13. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

CARE

- From time to time you should wipe off the front and side panels and the cabinet with a dry soft cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since this may damage the finish or remove the panel lettering.
- The Livemix system is capable of delivering high levels of volume. Please use caution with volume levels, listen with the lowest possible volume for proper operation and avoid exposure to prolonged high volume levels.
- The manufacturer cannot be held responsible for damages caused to persons, personal possessions, or data due to an improper or missing ground connection.

DIGITAL AUDIO LABS LIMITED WARRANTY

Digital Audio Labs warrants their products against defects in material and workmanship for a period of two years from date of purchase. During this period, Digital Audio Labs will, at its option, repair the defective unit or replace it with a new or rebuilt one.

The warranty does NOT cover:

- Damage due to abuse, misuse, or accident.
- Damage due to operation contrary to the instructions in the product instruction manual.
- Units on which the product serial number has been removed or altered.
- Units that have been serviced by unauthorized personnel.

All implied warranties, including warranties on merchantability and fitness, are limited in time to the length of this warranty. Some states do not allow time limitations on implied warranties, so this limitation may not apply to you. Digital Audio Labs' liability is limited to the repair or replacement of its product. Digital Audio Labs shall in no way be held liable for incidental or consequential damages resulting from the use of their product or its software, including, without limitation, damages from loss of business profits, business interruption, loss of business information or other pecuniary loss. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

REPAIR POLICY

Please do not return the product without obtaining an RMA number first. Contact Digital Audio Labs at support@digitalaudio.com to acquire an RMA number. Do not return the product to the place of purchase. Please write the RMA number on the outside of the shipping carton. Any product sent to us without a valid RMA number will be refused. Include the following with the product: a brief description of the problem, your name, return shipping address, phone number and the RMA number. Do not include any accessories. DAL is not responsible for any damage to or loss of the product during transit. We recommend that customers obtain a receipt and tracking number for all packages shipped to us. Turnaround time on repairs is generally ten business days. If you live outside of the United States, please contact your local distributor for warranty service.

Please return product to:
Digital Audio Labs
Attn: RMA Number
1266 Park Road
Chanhassen, MN 55317
USA

WARRANTY SERVICE

You will be required to pay the shipping charges when you ship your product to DAL. DAL will pay for return shipping via UPS ground. We reserve the right to inspect any product that may be the subject of any warranty claim before repair is carried out. For warranty service, we may require proof of the original date of purchase if you have not registered your product with DAL. Final determination of warranty coverage lies solely with Digital Audio Labs.

NON-WARRANTY SERVICE

If it is determined that the product does not meet the terms of our warranty, you will be billed for labor, materials, return freight and insurance. There is a \$80 USD minimum charge for materials and labor. Appropriate shipping charges will be applied. We require payment in advance of repair by credit card; we accept Visa and Master Card. In the event the charges are over the minimum charge, DAL will contact you and inform you of the cost of the repair before any work is completed.

CONTENTS

SAFETY INSTRUCTIONS	ii
IMPORTANT SAFETY INSTRUCTIONS.....	ii
CARE	ii
DIGITAL AUDIO LABS LIMITED WARRANTY.....	1
REPAIR POLICY.....	1
WARRANTY SERVICE.....	1
NON-WARRANTY SERVICE	1
CS-DUO PERSONAL MIXER.....	4
CONTENTS OF BOX.....	4
FEATURE LIST.....	4
CS-DUO ANATOMY.....	5
TOP PANEL	6
FRONT AND BACK PANEL	7
SETUP AND DIAGRAMS	8
CONNECTING A CS-DUO.....	8
CONNECTING TO IEMS, HEADPHONES AND MONITORS	9
OPTIONAL - CONNECTING TO A DA-816 ANALOG OUTPUT RACK UNIT	9
GENERAL CONCEPTS	10
TWO MIXERS IN ONE: TAKE CONTROL.....	10
LOCAL VS. GLOBAL.....	11
KNOBS (MASTER VOLUME, ADJUST VOL & PAN AND ME KNOB).....	11
CHANNEL OVERVIEW VS. SINGLE CHANNEL VIEW.....	12
CHANNEL OVERVIEW	13
ACCESSORY CHANNELS.....	14
AMBIENT MICROPHONE	14
INTERCOM.....	14
USING THE OPTIONAL LM-MICPRE	15
AUX INPUT	16
METRONOME.....	17
MIX TOOLS	18
LOCAL MIX OPTIONS.....	19
SINGLE CHANNEL VIEW SCREEN.....	20
SINGLE CHANNEL VIEW	20
CHANNEL NAMING.....	21
MUTE BUTTON	22
SOLO BUTTON	22
GROUP INDICATOR.....	22
CHANNEL EQ & DYNAMICS PRESETS.....	23
CHANNEL EQ	24
CHANNEL HIGH PASS FILTER (HPF)	25
CHANNEL DYNAMICS.....	26
MASTER OUTPUT SETTINGS.....	27
MASTER EQ.....	27
HIGH PASS FILTER (HPF)	28
MASTER DYNAMICS	28
MASTER REVERB.....	29
MASTER OUTPUT.....	30
GROUPS, STEREO GROUPS, ME GROUP	31
CONFIGURE A GROUP.....	31

CONFIGURE STEREO PAIRS	31
ADJUSTING THE VOLUME OF A GROUP	31
ADJUSTING THE VOLUME OF THE ME GROUP.....	32
ADJUSTING THE VOLUME OF A SINGLE CHANNEL IN A GROUP	32
VOLUME SCALING.....	32
LCD BRIGHTNESS.....	33
MUTE/SOLO OPERATION	34
SAVING & LOADING A PERSONAL MIX	35
MIRRORMIX® REMOTE MIXING	37
AUDITION A REMOTE MIXER	38
MIRRORMIX FUNCTIONS.....	38
MIRROR-MIXING A REMOTE MIXER	39
GLOBAL CONFIGURATION.....	40
GLOBAL OPTIONS.....	41
SET GLOBAL CLOCK	41
GLOBAL MUTE.....	41
PASSCODE	42
GLOBAL DIM LCDs	42
LIVEMIX VERSION INFO	43
INPUT SELECT.....	44
DIGITAL CONFIGURATION (PRIOR TO V4.0 ONLY).....	45
DANTE NETWORK CHANNEL SETUP	45
AUTO ASSIGN DANTE CHANNELS 1-24	45
MANUALLY ASSIGN DANTE CHANNELS.....	46
DEVICE/CHANNEL VIEW TOGGLE	46
IMPORT DANTE NAMES.....	47
LIVEMIX FIRMWARE UPDATE V4.0	48
SETUP USING DANTE CONTROLLER	48
DA-816 SOFTROUTE™.....	50
OUTPUT ID FEATURE.....	50
ASSIGN A MIX TO DA-816 OUTPUT	51
UNASSIGN AN OUTPUT	51
SAVING & LOADING A GLOBAL TEMPLATE	52
LIVEMIX FIRMWARE INSTRUCTIONS.....	53
CS-SOLO/CS-DUO UPDATE INSTRUCTIONS	53
CS-SOLO/CS-DUO FIRMWARE UPDATE TROUBLESHOOTING.....	54
MIX-16/MIX-32 FIRMWARE UPDATE INSTRUCTIONS	55
ACCESSORY: FP-2 FOOT PEDAL.....	57
SETTING UP THE FP-2 FOOT PEDAL.....	57
USING THE FP-2 FOOT PEDAL - STANDARD MODE	57
ACCESSORY: MT-1 MOUNT.....	58
ACCESSORY: LM-MICPRE EXTERNAL INTERCOM MIC PREAMP	58
LIVEMIX SYSTEM EXAMPLES.....	59
TROUBLESHOOTING	60
APPENDIX	62
PRESET EFFECTS LIST	62
CREATING A PERSONAL MONITOR MIX.....	63
MIXING TIPS.....	64
LIVEMIX SUPPORT	65
TECHNICAL SPECIFICATIONS	65
CS-DUO SPECIFICATIONS.....	65
LIVEMIX SYSTEM SPECIFICATIONS	66

CS-DUO PERSONAL MIXER

The Livemix CS-DUO performs the following functions:

- Receives audio, communication data and power from the MIX-16/MIX-32
- Provides two separate mixes, each with headphone outputs
- Provides an easy to use and powerful set of controls
- Provides stereo headphone amplification or mono output of personal mixes

CONTENTS OF BOX

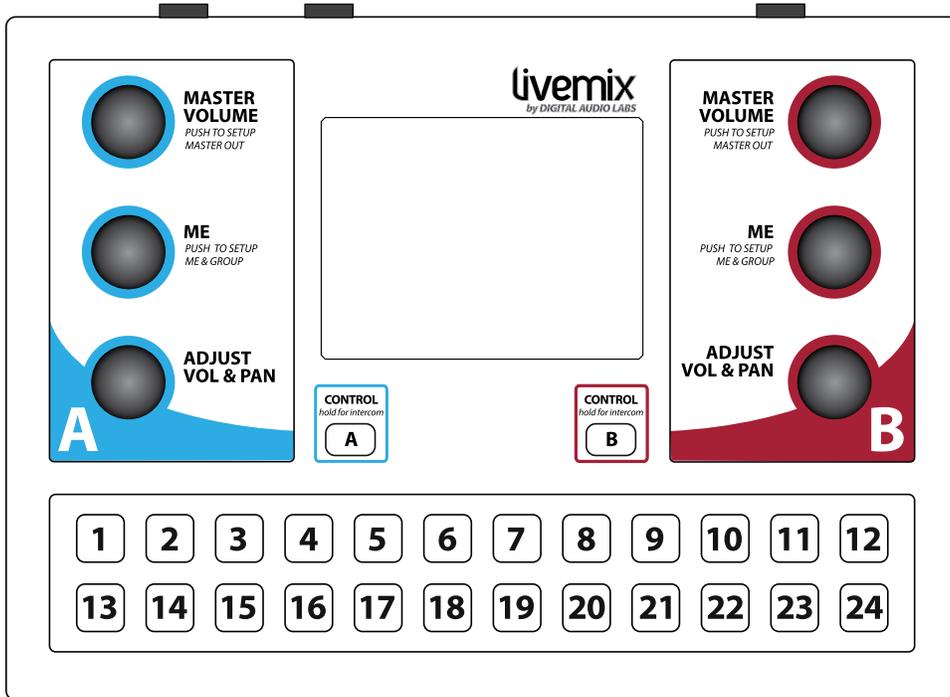
The CS-DUO contains the following pieces inside the box:

- CS-DUO unit
- Quick Start Guide
- Registration Card

FEATURE LIST

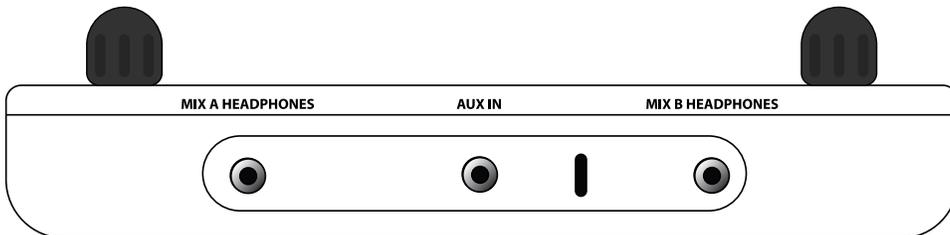
FEATURE	BENEFIT
Channel overview on LCD touchscreen	Quick and easy identification of channels
Color LCD Touch Screen	Informative displays with direct interaction
Illuminated channel and buttons	Quick identification of currently selected channel
Custom channel naming	Select instrument or singer by custom name
Continuous rotary/push switch knobs (3 per mix)	Quick and easy adjustment of different settings
ME Group plus 4 additional channel groups	Allows for quick volume adjustments of logical groups such as drums, background vocals, etc.
Two discreet mixes per unit	Allows the personal monitor mixer to be shared by two users, saving money, cabling and stage space
Built-in stereo ambient microphones	Allows the ambient sound of the stage and audience to be included in each personal mix
Built-in Intercom	Easy communication with other band members on the stage or in the studio
Auxiliary Input	Connect a media device for sharing audio in rehearsals or performances
Built-in metronome	Provides tempo and timing reference for all users
Power and audio over single network cable	Reduces stage clutter and simplifies setup
24 Channels of input audio	Allows for greater mix customization
EQ & Dynamics presets on every channel	Sweepable EQ, High Pass Filtering and Compression Settings allow you to craft the channel's sound
EQ, Dynamics & Reverb on the master output	Fine tune the overall sound of your mix
MirrorMix® Remote Mixing	Experienced users can assist performers by pushing out mix settings and customizing mixes
Save/Load individual mixes to/from USB	Allows users to bring previously perfected mixes to rehearsals or the next venue
High gain headphone amplifier	Provides clean, great-sounding audio quality
Mute and Solo on each channel	Check the sound of an individual instrument, as well as mute the channel in a mix
Optional foot pedal for hands-free mixing	Adjust volume and select channels while keeping your hands on your instrument
Option to link A and B mixes	Allows both sets of knobs to control the same mix, when a CS-DUO is used for a single performer
¼" Balanced mono output option	Allows output to powered floor monitors

CS-DUO ANATOMY



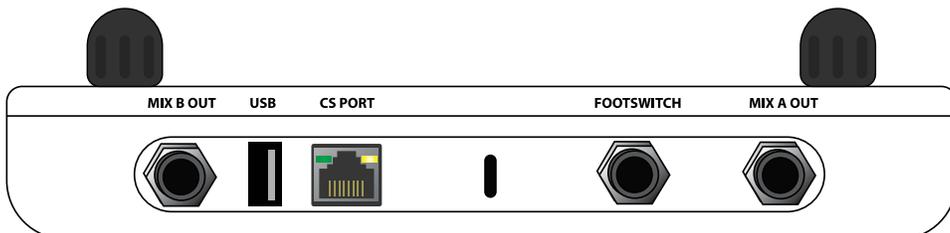
CS-DUO TOP

- Master Volume Knob
- Adjust Vol & Pan Knob
- Dedicated "Me" Knob
- Color Touchscreen
- Control/Intercom Button
- Channel Select Buttons



CS-DUO FRONT

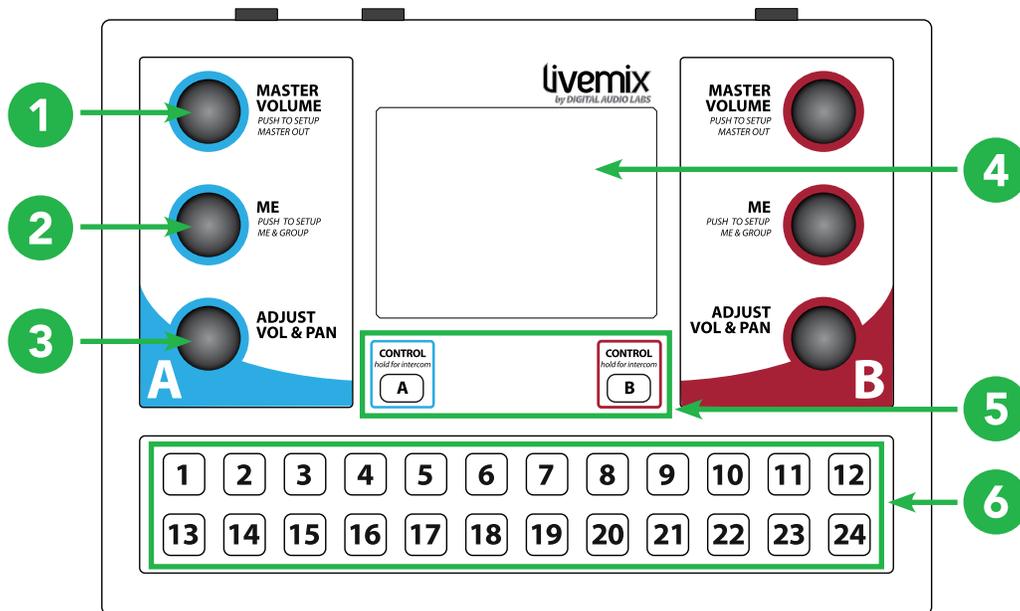
- 1/8" Mix Output (TRS)
- 1/8" Auxiliary Input (TRS)
- Ambient Mic



CS-DUO BACK

- 1/4" Mix Output (TRS)
- 1/4" Foot switch Jack (TRS)
- CS Port
- USB Port
- Ambient Mic

TOP PANEL



1 MASTER VOLUME KNOB

ROTATE to adjust the overall level of each mix. The master volume affects both the level of the $\frac{1}{8}$ " and $\frac{1}{4}$ " outputs. PRESS this knob to access the Master Output settings.

2 ME KNOB

The ME knob adjusts the volume of the assigned ME group. PRESS the ME knob to configure which channels make up the ME group and other groups.

3 ADJUST VOLUME & PAN KNOB

On the Channel Overview screen, this knob functions as the VOLUME knob. PRESS the knob to toggle between volume and pan. On other screens, use this knob to make adjustments or select other features.

4 COLOR TOUCHSCREEN

Most Livemix features can be accessed by selecting channels, menus, and deeper features using the touchscreen. The screen will automatically update to reflect changes made. Note: The touchscreen is resistive not capacitive. It may require a bit more pressure than you are used to. One of the advantages of this kind of screen is that you can use guitar picks, styluses, or other firm objects to interact.

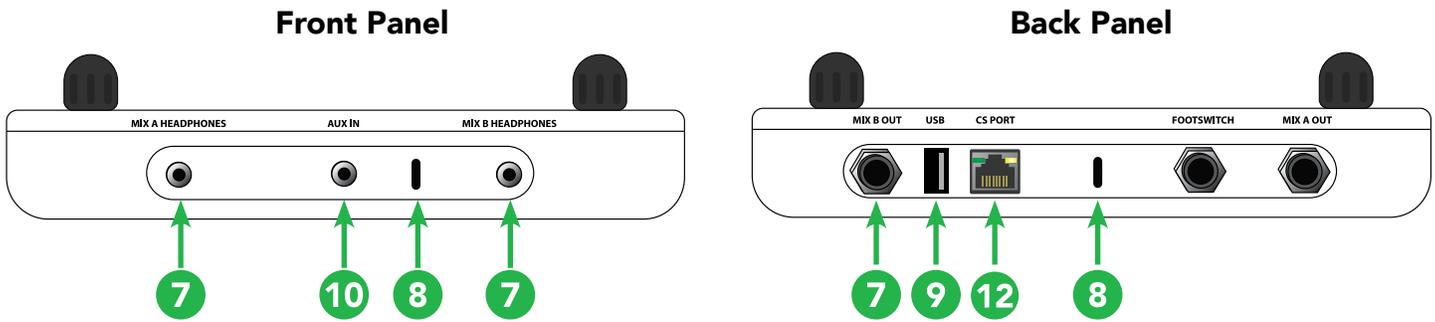
5 CONTROL/INTERCOM BUTTON

The CONTROL button switches between *A mix (blue)* and *B mix (red)*. PRESS and HOLD CONTROL/INTERCOM to communicate with band members. See Intercom section for more information on using the Intercom with optional LM-MICPRE external intercom microphone preamp.

6 CHANNEL SELECT BUTTONS

Select any of the 24 audio channels using these buttons.

FRONT AND BACK PANEL



7 HEADPHONE AND MIX OUTPUT

The $\frac{1}{8}$ " and $\frac{1}{4}$ " jacks share the same stereo output. These can also be configured to be balanced mono. See the section "Master Output" for more details. Connect headphones to either output.

8 AMBIENT MICROPHONES

These ports house the built-in ambient microphones. Increasing the volume of the Ambient Microphone channel on the Accessory Channels page allows stage ambience to be added to your mix.

9 USB PORT

The USB port allows you to load and save personal mixes. It is also used for updating the personal mixer. See the section "Loading/Saving a Personal Mix" for more details.

10 AUXILIARY INPUT

This $\frac{1}{8}$ " unbalanced stereo input allows you to connect an auxiliary audio device, such as a portable music player, phone, laptop or metronome. The audio from the auxiliary device can be shared with other personal mixers.

11 FOOT SWITCH CONNECTOR

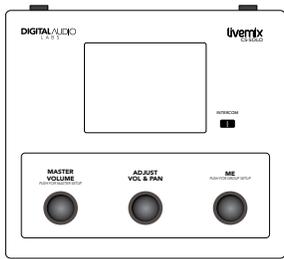
Connect the optional Livemix FP-2 Foot Pedal to this connector for hands-free mixing.

12 CS PORT

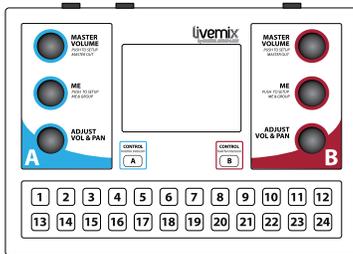
This connects to one of the Control Surface Ports on the MIX-16/MIX-32 unit and supplies audio, communication data and power to the CS-DUO.

SETUP AND DIAGRAMS

Each Control Surface Port on the MIX-16/MIX-32 supports two mixes.



The CS-SOLO setup is as simple as connecting a CAT5e or CAT6 cable (shielded recommended) from the CS Port In to an available port on the MIX-16/MIX-32. To utilize the second available mix on this MIX-16/MIX-32 port, connect a CAT5e or CAT6 cable (shielded recommended) from the CS Port Thru on the first CS-SOLO to the CS Port In on the second CS-SOLO.

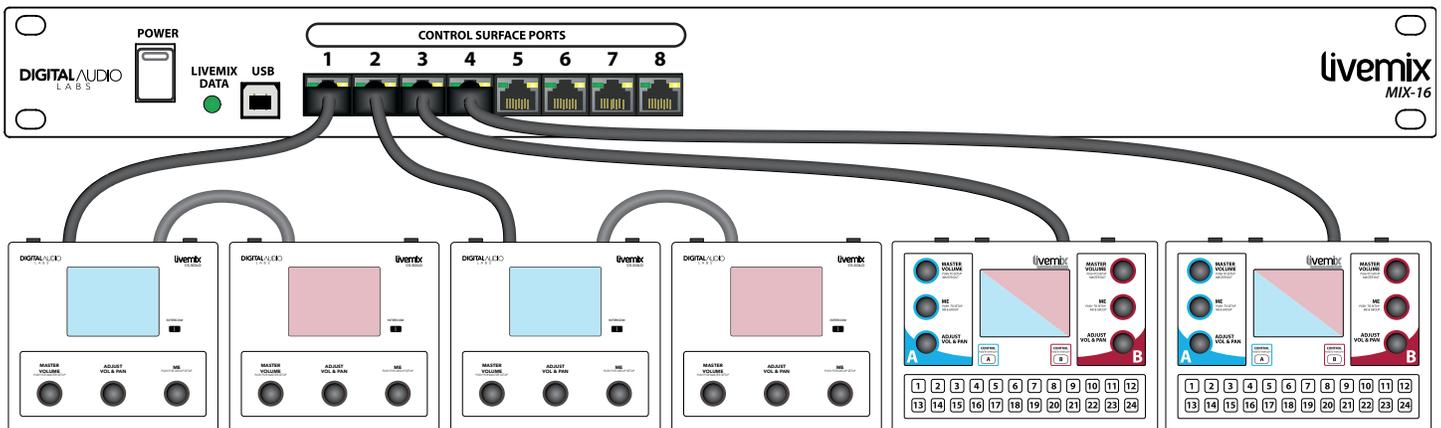


The CS-DUO supports two mixes. To set up the CS-DUO, connect a CAT5e or CAT6 cable (shielded recommended) from the CS-DUO to an available Control Surface Port on the MIX-16/MIX-32. Please note, only one CS-DUO can connect to a CS Port on the MIX-16/MIX-32. You cannot connect a CS-DUO to the CS Port Thru on a CS-SOLO.

Once connected, turn on the MIX-16/MIX-32. Audio, communication data and power is supplied by the MIX-16 or MIX-32 to the personal mixers using a standard network cable. The system will require some basic setup, which is performed on a personal mixer. See the *Global Configuration* section for more information.

CONNECTING A CS-DUO

* MIX-16 pictured

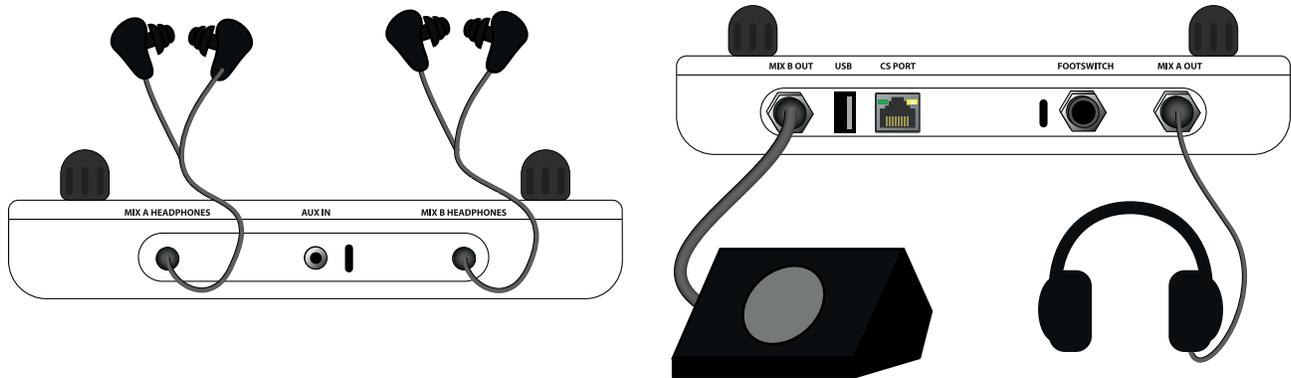


Each Control Surface Port on the MIX-16/MIX-32 supports either two CS-SOLOs or one CS-DUO. Connect the CS PORT IN on a CS-SOLO to a Control Surface Port on the MIX-16/MIX-32. If using a second CS-SOLO, connect the CS Port Thru on the first CS-SOLO to the CS PORT IN on the second CS-SOLO. See Connecting Two CS-SOLOs

WARNING: WHILE LIVEMIX DATA IS TRANSMITTED OVER STANDARD NETWORK CABLES, IT IS NOT IN THE FORMAT THAT A NETWORK CAN READ. DO NOT USE SPLITTERS, COUPLERS OR HUBS BETWEEN ANY CS-SOLO OR CS-DUO AND THE MIX-16/MIX-32. DO NOT CONNECT THE CS-SOLO OR CS-DUO INTO AN ETHERNET NETWORK. THIS COULD CAUSE DAMAGE TO THE PERSONAL MIXER.

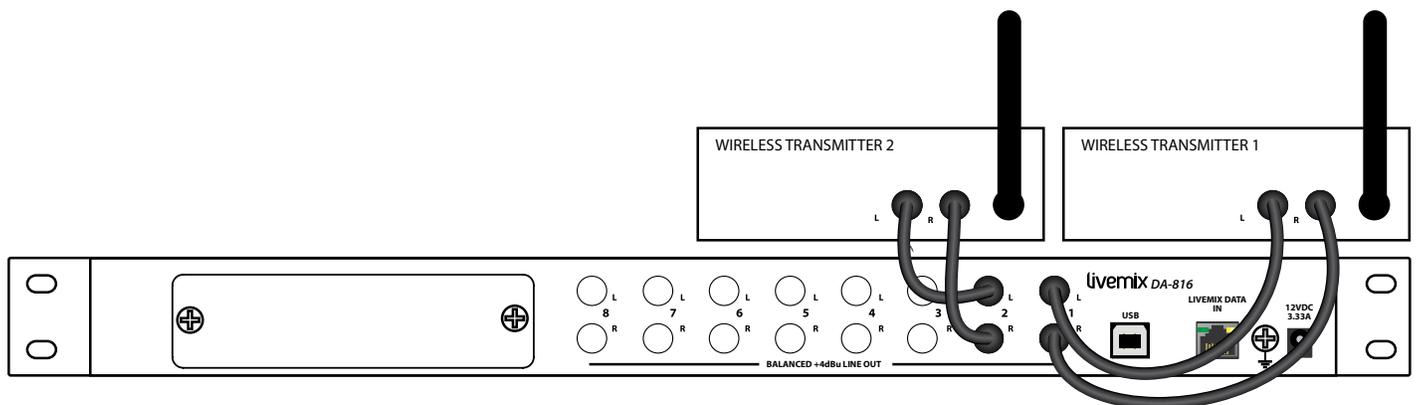
CONNECTING TO IEMS, HEADPHONES AND MONITORS

The Master Output settings on the personal mixer provide for either stereo headphone or balanced mono outputs. The $\frac{1}{8}$ " and $\frac{1}{4}$ " jack output is identical and either can be used. It is recommended to use either the $\frac{1}{8}$ " or $\frac{1}{4}$ " jack and not both.



OPTIONAL - CONNECTING TO A DA-816 ANALOG OUTPUT RACK UNIT

Personal mixes can be assigned to the optional Livemix DA-816 analog output rack unit from the CS-SOLO/CS-DUO touchscreen. The DA-816 provides stereo balanced outputs for 8 personal mixes, such as wireless in-ear transmitters, powered monitors or powered house speakers. See the *DA-816 User Guide* for more information.



GENERAL CONCEPTS

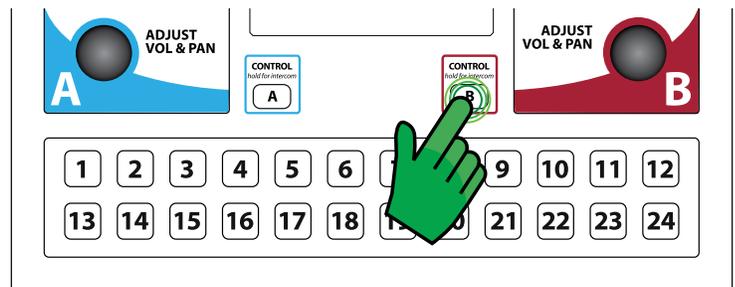
To best understand how to use the CS-DUO, it is helpful to become familiar with some important concepts.

1. The CS-DUO provides two separate mixers in one hardware unit.
2. Some adjustments are local and apply only to your mix. Others are global and apply to the entire system.
3. The most used functions are available on the touchscreen and knobs. This makes it easy to access critical mix functions and makes it simple for anyone to use with very little training.
4. The "X" will always return you back one screen. LONG PRESS the X to go back to the Channel Overview from any menu depth.

TWO MIXERS IN ONE: TAKE CONTROL

The *A* mix is represented by the color **BLUE**, and the *B* mix is represented by the color **RED**.

PRESS your CONTROL button before making any changes. When you take control, the colors of the touchscreen will switch to the appropriate color. All channel select buttons, knobs and touchscreen controls are assigned to the selected mix.



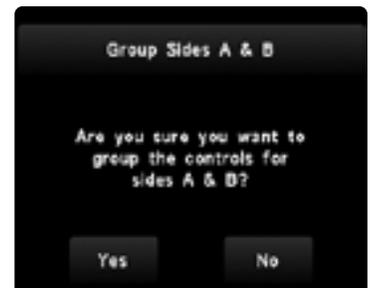
LINK MIX A AND MIX B FOR SINGLE PERFORMER USE

In certain cases, the CS-DUO will be used by a single performer. The "A" and "B" mixes can be linked so that both sets of knobs control the "A" mix.

To link the "A" and "B" mixes:

1. SELECT the "A" MIX
2. LONG PRESS both Master Volume knobs
3. Confirm that you want to group the controls

To unlink the mixes, LONG PRESS on both Master Volume knobs and confirm that you want to ungroup the sides.



NOTE:

Linking the two sides is not saved with your mix and will be reset when the power is turned off.

LOCAL VS. GLOBAL

LOCAL FUNCTIONS

Each CS-DUO can make changes to a local personal mix or be used to make changes that effect the entire system. Local changes are those that apply to your personal mix only. These include:

- Volume and pan adjustments
- Master Output Settings
- Local Mix Options

GLOBAL FUNCTIONS

Global changes not only affect your mix but also the other personal mixers in the system. Examples of global changes:

- Adjusting the system time
- Changing the channel effects
- Naming a channel
- Global Mute
- Global LCD Dim
- Passcode

Global Configuration settings (accessible from the Mix Tools) will appear purple, indicating that changes made are global in nature. The exception to this is the channel effects. These will still appear in the color of the selected mix. This is explained in the Channel Effects section.

KNOBS (MASTER VOLUME, ADJUST VOL & PAN AND ME KNOB)

Each mix has a dedicated set of controls for the most commonly used functions.

These controls include:

1. The MASTER VOLUME knob controls the mix output volume level. PRESS the MASTER VOLUME knob to get to the Master Output settings.
2. The ADJUST VOL & PAN knob is used to adjust the volume or pan of the selected channel or to adjust a selected function. PRESSING the ADJUST knob will toggle between volume and pan, or tab between selected functions.
3. The ME knob controls the volume of the ME Group. It is always available for adjusting no matter what screen you are on. PRESS to set up the Me Group and additional groups.

NOTE:

You can also take control by ROTATING the ADJUST knob for your mix.

CHANNEL OVERVIEW VS. SINGLE CHANNEL VIEW

Livemix provides a Channel Overview and a Single Channel View. The Channel Overview is best for mixing, as it allows you to quickly identify which channels you want to adjust. The Single Channel View provides additional functions. From here, you have access to mixing a single channel and also other functions; Channel Naming, Channel EQ/Dynamic Presets and mute and solo.

LONG PRESS a channel to access the Single Channel View from the Channel Overview.

PRESS X to return to the Channel Overview.



CHANNEL OVERVIEW



SINGLE CHANNEL VIEW

CHANNEL OVERVIEW

The Channel Overview is the default view when the Livemix CS-DUO personal mixer is powered up. Most mixing will be performed on this screen. Each channel in the Channel Overview shows the following information:



CHANNEL OVERVIEW



ACCESSORY CHANNELS



MIX TOOLS

1. **CHANNEL NUMBER:** This is the number of the audio channel. The Livemix system allows up to 24 input channels.
2. **CHANNEL NAME:** This is the custom channel name.
3. **SIGNAL LEVEL INDICATOR:** This indicator serves as a signal level meter for the channel. It is colored gray if no signal is present, then illuminates in green, yellow and finally red, as the signal increases in level.
4. **VOLUME LEVEL:** This horizontal strip shows the current volume level of the channel.
5. **PAN LEVEL (NOT SHOWN):** The volume strip switches to pan by pressing the ADJUST knob.
6. **SHOW 13-24 (SHOW 1-12):** This switches the Channel Overview to channels 13-24 or back to channels 1-12.
7. **ACCESSORY CHANNELS:** This switches to the Accessory Channels screen. Adjust levels for built-in intercom, metronome, ambient microphones and the auxiliary input.
8. **MIX TOOLS:** This switches to the Mix Tools screen. The Mix Tools page allows you to access settings for the local mix and perform other advanced mixing functions.
9. **STATUS BAR:** Certain features will be indicated or referenced here.

For more details, see the appropriate feature section.

ACCESSORY CHANNELS

In addition to the 24 channels of audio, Livemix provides four Accessory Channels. PRESS Accessory Channels on the Channel Overview screen to reach the accessory channels page.

Each accessory channels can be blended into your mix the same as any other channel. Some of the Accessory Channels offer additional features through their respective Single Channel View screens. They can be accessed by LONG PRESSING the channel.



AMBIENT MICROPHONE

Ambience is the sound of the stage and room around you. The personal mixer has two built-in microphones that can blend in with your mix. This is useful when using headphones or in-ear monitors as it is easy to feel "closed off" due to the sealed nature of those monitoring systems. By adding in some of the ambient sound of the stage and audience, you can make your in-ear mix sound much more natural, because you are hearing the sound of the audience and the natural reverb of the stage.

INTERCOM

Livemix contains a built-in intercom for communicating with other members of your team or band.

Adjust the volume level of the Intercom on the Accessory Channels page. This allows you to hear other performers when they press their intercom button.

To activate the intercom, PRESS and HOLD the CONTROL button. The built-in microphones will pick up your voice and transmit it to all the other personal mixers. When done, release the CONTROL button.

When the Intercom is active, a white indicator will illuminate in the status bar on the top of the screen. An ACTIVE indicator will also appear on the Intercom cell on the Accessory Channels page.

NOTE: The first press of the CONTROL will ensure the appropriate side of the CS-DUO is in control. Any press of the CONTROL longer than .5 seconds will activate the Intercom.

USING THE OPTIONAL LM-MICPRE

NOTE:
If you find you are playing with one in-ear monitor in and the other out, adjust the level of ambient noise in your mix. Playing with one in-ear monitor out may damage your hearing.



The LM-MICPRE is an optional microphone preamp for using an external dynamic mic as an alternative to the built-in intercom mics. Using an external dynamic microphone as the intercom mic will provide a higher quality intercom with significantly reduced background noise.



CS-SOLO PICTURED

ATTACHING THE LM-MICPRE

1. Connect the included USB cable and 1/8" TRS cable to the LM-MICPRE and feed the loose ends through the MT-1.
2. Connect the USB cable to the personal mixer USB port (front on the CS-SOLO, back on the CS-DUO) and the 1/8" TRS cable to the AUX-IN port.
3. If using the Livemix MT-1 mount, position the LM-MICPRE with the threaded mount holes "inside" the MT-1. Use either the thumbscrews or Phillips head screws to fasten. If your Livemix personal mixer is not mounted on a stand, use the Phillips head screws and attach the rubber support feet.
4. Connect a dynamic microphone to the XLR connector on the LM-MICPRE with a standard XLR cable (not included).

CONFIGURING THE LM-MICPRE & EXTERNAL MICROPHONE

1. PRESS Accessory Channels on the Channel Overview.
2. PRESS and HOLD the Intercom Channel button.
3. PRESS LM-MICPRE so the cell is gray and says "LM-MICPRE On".
4. PRESS External Mic Setup.
5. Speak into the external mic while adjusting the gain knob on the LM-MICPRE. The Mic Level on the VU should be in the yellow range when speaking at normal stage levels.



NOTE: If some users are using the built-in intercom and some are using external microphones, you may need to adjust the gain knob on the LM-MICPRE to match respective intercom volume levels.

INTERCOM BUTTON

When using the LM-MICPRE function, the CONTROL button can be configured in one of three different modes. When the intercom is active, a white indication will illuminate on the Status Bar and an active indicator will appear on the Intercom Channel cell on the Accessory Channels page.

- **ALWAYS ON:** The intercom microphone is always on and passing audio to the Intercom Channel of other personal mixers.
- **LATCH:** Press the Intercom Button to activate the intercom. Press the Intercom Button again to deactivate the intercom.
- **PUSH TO TALK (default operation):** Press and hold the intercom button to activate the intercom. Release the Intercom Button to deactivate the intercom.



FOOT PEDAL OPERATION

The optional FP-2 foot pedal can be configured to work in intercom mode. In intercom mode, button 1 activates the intercom and functions the same as the Intercom Button. Button 2 adjusts the volume of the ME GROUP. A short press increases volume and a long press decreases volume.

NOTE: When the LM-MICPRE button is turned on, the built-in intercom mics will be deactivated. Any input into the Aux-In port will be routed to the Intercom Channel. The Aux-In Channel will control the volume from non-local auxiliary sources. The Ambient mics are unaffected.

AUX INPUT

This is the signal from any audio source feeding the 1/8" Aux In connector located on the front panel of the personal mixer. You can adjust the volume of the Aux In from the Accessory Channel screen. In addition to the standard volume and pan options, the Aux Input has two other functions accessible via the Single Channel View. They can be accessed with a LONG PRESS on the channel.

SHARE AUX

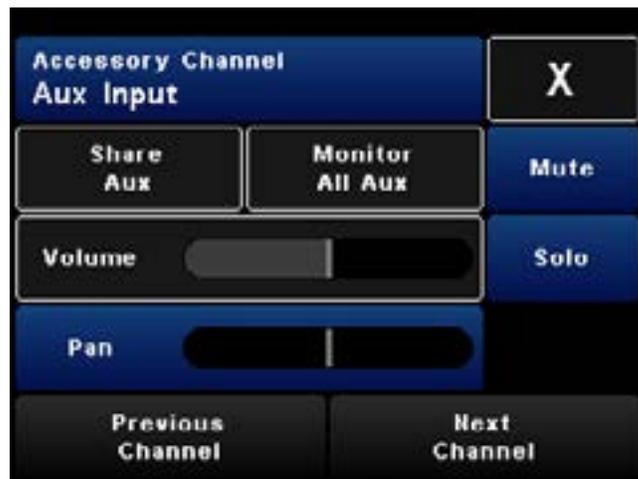
The Share Aux button allows you to share your Auxiliary Input with other personal mixers in the system. When Share Aux is not selected, your Aux Input will be local to your personal mixer. This is useful for a local click track or rehearsing.

When Share Aux is selected, the audio on your Auxiliary Input is available to anyone who has selected Monitor All Aux. Use this for rehearsing or performing with the band. Verify Monitor All Aux is selected and adjust Aux Input volume.

NOTE: When using the LM-MICPRE, the Share Aux will be unavailable as the Aux In port is used for the Intercom channel. The volume will control non-local Aux Inputs that have been shared.

MONITOR ALL AUX

The Monitor All Aux button allows you to hear other Auxiliary inputs that are being shared. Leave this unselected if you do not want to hear other Auxiliary inputs.



METRONOME

The personal mixer contains an internal metronome. When the Metronome is activated, everyone can hear the click track as long as the Metronome volume is turned up in their mix. Metronome configuration is accessible by LONG PRESSING the channel, to enter Single Channel View.

BPM (BEATS PER MINUTE)

BPM displays the current tempo. The quickest way to set a tempo is to PRESS BPM and use the ADJUST knob to increase or decrease tempo.

MET ON/OFF

Met On/Off turns the metronome off and on.

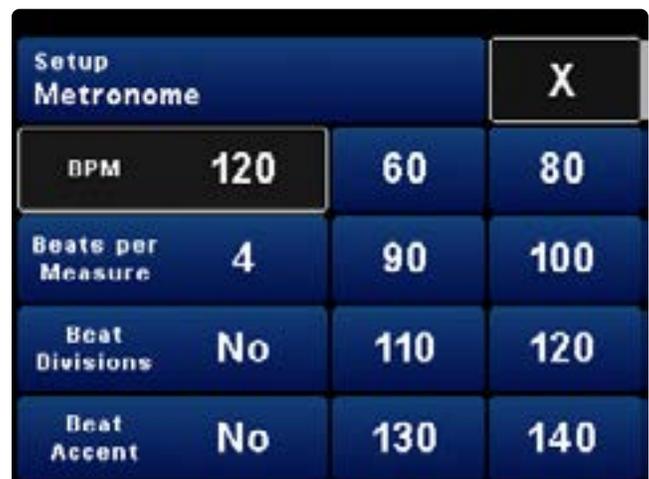
MET SETUP

PRESS Met Setup to access the Metronome setup.

SETTING UP THE METRONOME

The internal metronome has a number of options that can be accessed by pressing Met Setup.

1. **BPM:** Press BPM to adjust the tempo of the metronome. Use the ADJUST knob to change the tempo.
2. **BEATS PER MEASURE:** PRESS Beats per Measure to cycle through the options for number of beats in each measure.
3. **BEAT DIVISIONS:** PRESS Beat Divisions to cycle through the options for dividing each beat. Beat divisions are played with a different click tone.
4. **BEAT ACCENT:** PRESS Beat Accent to accent the downbeat of each measure with a different click tone.
5. **Beat Presets:** SELECT one of the tempo presets to instantly change to that tempo.



MORE ABOUT THE METRONOME

- The Metronome signal is global. If a user starts metronome playback, everyone will hear it if the metronome volume is turned up for their personal mixer.
- The Metronome can be changed by any personal mixer.
- Use the AUX IN to connect an external metronome.

MIX TOOLS

The Mix Tools menu provides access to Local Mix Options, MirrorMix® Remote Mixing, Global Configuration and Load/Save Personal Mix.

To view the Mix Tools, PRESS Mix Tools on the Channel Overview.



LOCAL MIX OPTIONS

The Local Mix Options provide the user with deeper local mix features. These features and functions pertain to the local mix only and will not impact other personal mixes.

MIRRORMIX® REMOTE MIXING

MirrorMix® Remote Mixing allows any experienced user to help performers from any Livemix personal mixer. Being able to push a starter mix to anyone, allows them to better focus on the music and audience and further train them on mixing. *For more details, see the MirrorMix section.*

GLOBAL CONFIGURATION

The Global Configuration provides options to set up the overall system. These features and functions apply to the whole system. *For more details, see the Global Configuration section.*

LOAD / SAVE PERSONAL MIX

For more details, see Saving & Loading a Personal Mix section.

LOCAL MIX OPTIONS

SINGLE CHANNEL VIEW

This provides an alternate way to get to the Single Channel View. It is the same as performing a LONG PRESS on a channel. *For more details, see the Single Channel View section.*

MASTER OUTPUT SETTINGS

The Mix Output Settings are options that pertain to the overall output of the Livemix mixer. These settings affect the stereo or mono mix.



Another way to access these options is to PRESS the Master Volume Knob. *For more details, see the Mix Output Settings section.*

GROUP & ME SETUP

This provides an alternate way to get to the Group Setup. It is the same as pressing the ME knob. *For more details, see the Group & Me Setup section.*

ADJUST ALL CHANNELS

This is a quick way to put all the channels including Accessory Channels into a temporary group to scale their volume levels all at once.

LCD BRIGHTNESS

This allows you to adjust the brightness of the LCD screen and turn Auto Dim on and off. *For more details, see the LCD Brightness section.*

MUTE/SOLO OPERATION

This allows you to adjust local Mute or Solo options. *For more details, see the Mute/Solo Operation section.*

SINGLE CHANNEL VIEW SCREEN

Most mixing can be performed on the Channel Overview screen. However, Livemix provides a number of professional tools that can be used to help create a better mix. These features are accessed from the Single Channel View.

To access Single Channel View:

- LONG PRESS the channel -or-
- PRESS Mix Tools from the Channel Overview, SELECT Local Mix Options and then SELECT Single Channel View.

SINGLE CHANNEL VIEW

1. **CHANNEL NUMBER/NAME:** This shows the channel number and name. LONG PRESS to customize the name. Name changes are Global.
2. **EQ/DYNAMICS PRESET:** This shows the EQ & Dynamics Preset. LONG PRESS to view presets or customize EQ & Dynamics settings. EQ & Dynamics Presets are Global.
3. **MUTE BUTTON:** PRESS Mute to silence the channel in a mix. A red indicator will illuminate in the Status Bar on the right. Please note, if the Global Mute feature is enabled, a muted channel will be muted globally, or for everyone; Mute will be replaced with Global Mute.
4. **SOLO BUTTON:** PRESS Solo to solo the channel in a mix. A yellow indicator will illuminate in the Status Bar on the right.
5. **GROUP INDICATOR:** If the channel is in a group, the Group button will display which group the channel is in, otherwise the Group indicator will not be displayed.
6. **VOLUME AND PAN DISPLAY:** Shows the volume level and pan position of the channel.
7. **PREVIOUS/NEXT CHANNEL:** PRESS to go to the next or previous channel.
8. **X:** PRESS X to exit Single Channel View.



See the section "Advanced Monitor Mixing with the Single Channel View Screen" for more details.

CHANNEL NAMING

Custom channel names can be assigned to each of the 24 incoming audio channels. Channel names are displayed in both the Channel Overview screen and the Single Channel View screen.

To name a channel:

- LONG PRESS the channel to enter Single Channel View.
- LONG PRESS channel number/name at the top.
- ENTER the channel name.
- PRESS Done.
- Use Next Channel or Previous Channel when naming multiple channels.
- PRESS Done.

NOTE:

Channel names are global. When you name the channels on your personal mixer, the channel names will be visible on all the Livemix personal mixers in the system.



MUTE BUTTON

PRESS Mute to silence the channel in a mix. A red indicator will illuminate in the Status Bar on the right. Mute is visible in the Channel Overview for the muted channel.

Please note, if the Global Mute feature is enabled, a muted channel will be muted for everyone, or globally. If Global Mute is active, the Mute button will be replaced with a Global Mute button. See the *Global Mute* section of this guide.



SOLO BUTTON

PRESS Solo to silence all non-soloed channels in a mix. When a channel is soloed, a yellow bar will illuminate in the Status Bar on the right. Solo is visible in the Channel Overview for the soloed channel.

GROUP INDICATOR

If the channel is in a group, the Group button will display which group the channel is in. If it is not in a group, the Group indicator will not be displayed.

TIP: Temporarily remove a channel from its group by performing a LONG PRESS on the Group button. Once the Group button flashes, make adjustments to the volume of the channel. PRESS the Group button again to place the channel back in the group.

NOTE:

Mute and Solo functions apply to groups as well. If a channel is in a group and you press mute, it will mute the entire group.



CHANNEL EQ & DYNAMICS PRESETS

The personal mixer allows you to select from a list of equalization and dynamics presets that enhance the sound of the selected channel. These presets are generic so be sure to listen to determine if a preset works for the source material.

Adding or changing channel effects are global changes, not local changes. Any preset changes will be heard by everyone.

Presets allow quick set up for EQ & Dynamics levels, for each of the 24 available channels.



TO SELECT AN EQ & DYNAMICS PRESET:

1. LONG PRESS EQ & Dynamics Preset.
2. PRESS continue on the warning screen.
3. ROTATE the ADJUST knob to select a preset.
4. PRESS X to return to Single Channel View.

In the channel preset screen, you are presented with a list of useful presets, organized by different instruments. Each preset is custom designed to apply equalization and dynamics adjustments that complement the specific instrument the preset is named after.



PRESS Previous Channel or Next Channel to quickly navigate to other channels. Repeat steps 3.

If a PASSCODE has been set, you will be prompted to enter the passcode before entering Channel EQ & Dynamics Presets. See the Passcode Section for more details.

The available presets are listed in the Appendix.

CHANNEL EQ

The 3-band EQ can be used to tailor the overall sound of the selected channel. The Channel EQ is a powerful tool. It is best to make small adjustments and continually listen to make sure that the changes enhance the source or make it fit better in the mix.

TO ADJUST THE LEVEL OF THE THREE EQ BANDS:

1. While still on the EQ & Dynamics Preset screen, PRESS Channel EQ.
2. PRESS one of the three bands to adjust.
3. ROTATE the ADJUST knob to cut or boost the EQ band.

TO ADJUST THE FREQUENCY OF THE THREE EQ BANDS:

1. LONG PRESS one of the EQ bands.
2. ROTATE the ADJUST knob to change the center frequency of the EQ curve.

You can also PRESS the ADJUST knob to tab through the EQ bands, for both the boost or cut and the frequency modes.

NOTE:

The EQ for the high and lower are shelving with a Q of 0.707. The mid is peak/dip with a Q of 1.5.



CHANNEL HIGH PASS FILTER (HPF)

The High Pass Filter allows you to roll off some of the low frequencies that can lead to muddy sounding mixes. As the name implies, it lets the highs “pass through” and reduces the amount of low frequencies. Most channels that do not contribute to the low end of the mix, should use a HPF.

To access the High Pass Filter, PRESS HPF Settings from the Channel EQ screen.

PRESS one of the five HPF frequency choices:

- **OFF:** HPF bypassed.
- **40Hz:** 40Hz or lower will be filtered out. This setting is good for most instruments.
- **80Hz:** 80Hz or lower will be filtered out. This setting will cut out some 60Hz hum and noise, good for male vocals.
- **150Hz:** 150Hz or lower will be filtered out. This is another good setting for cutting hum. It is also good for many stringed instruments.
- **250Hz:** 250Hz or lower will be filtered out. This is a good setting for higher pitched instruments and female vocals.

NOTE:

The Channel EQ and HPF Settings share a page tab. When on the Channel EQ page, the HPF Settings tab will be visible. When on the HPF Settings page, the Channel EQ tab will be visible.



CHANNEL DYNAMICS

Dynamics are the amount of difference, or the dynamic range, between the softest sound heard in a mix, and the loudest. To even out the dynamics in a mix, a compressor is used.

To access the compressor, PRESS Channel Dynamics. The compressor has two controls; one is the amount of compression applied to the channel and the second is the type.

ROTATE the ADJUST knob to adjust the amount of compression applied to the mix.



PRESS any of the 4 buttons at the bottom of the screen to select how much compression is needed.

1. **OFF:** Compressor bypassed.
2. **LIGHT/MEDIUM/HEAVY:** Differing amounts of compression will be applied to the dynamic range of the mix. Try each setting and see which one sounds best.

MASTER OUTPUT SETTINGS

This screen allows you to make adjustments to the master output. Master output refers to the stereo left and right sound that you hear after combining all the 24 channels and Accessory Channels. The Master Output settings are saved with your personal mix.

MASTER EQ

The Master EQ is a three band EQ that helps shape the overall master output. It does not have the granularity of the Channel EQ and is designed to make subtle overall tonal changes.

HPF SETTINGS

The High Pass Filter allows you to roll off the lower frequencies.

MASTER DYNAMICS

The Master Dynamics allow you to apply compression to the overall mix.

MASTER REVERB

Master Reverb allows you to apply a reverb effect to your stereo mix, in order to make it sound more natural and mimic the effects of a natural acoustic environment.

MASTER OUTPUT

The Master Output button has output options for the personal mixer. These include Stereo or Mono mode, Mute Master Output and Limiting options.

MASTER EQ

This 3-band EQ can be used to tailor the overall sound of the monitor mix that you hear.

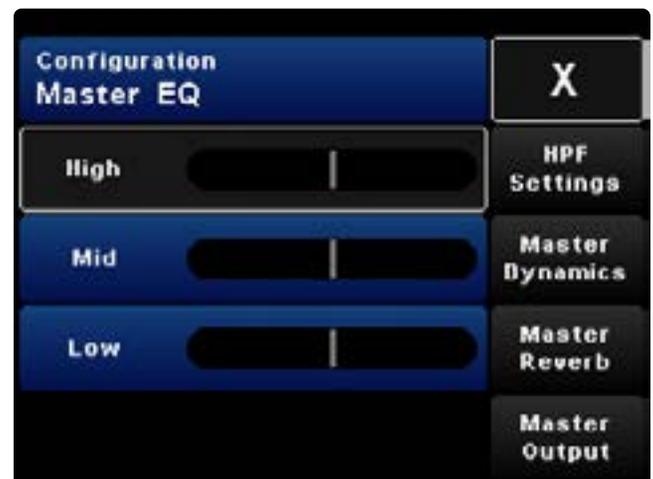
To adjust any of the three EQ bands, SELECT the desired band on the screen (it will turn gray), then ROTATE the ADJUST knob to boost or cut the selected EQ band. You can also PRESS the ADJUST knob to quickly cycle through the three EQ bands.

TO ADJUST THE FREQUENCY OF THE THREE EQ BANDS:

1. LONG PRESS one of the EQ bands.
2. ROTATE the ADJUST knob to change the center frequency of the EQ curve.

NOTE:

The Master EQ and HPF Settings share a page tab. When on the Master EQ page, the HPF Settings tab will be visible. When on the HPF Settings page, the Master EQ tab will be visible.



NOTE:

The mid Q on the Master EQ differs slightly from the Channel EQ. The mid is peak/dip with a Q of 2.0. The EQ for the high and lower are shelving with a Q of 0.707, the same as the channel EQ.

HIGH PASS FILTER (HPF)

A high-pass filter lets the high-frequencies pass through your mix unaffected, but filters away the low frequencies. This is a useful with monitors that have too high a bass-response.

Applying a 80Hz to 120Hz High Pass Filter to floor monitors will help clean up your mix.

SELECT one of the four HPF settings that sounds best to you.



3. **OFF:** High-Pass filter bypassed.
4. **40Hz:** Only the very lowest frequencies, 40Hz or lower, will be filtered out.
5. **80Hz:** A larger amount of lower frequencies, 80Hz or lower, will be filtered out.
6. **120Hz:** The largest amount of lowest frequencies, everything from 120Hz or lower, will be filtered out.

MASTER DYNAMICS

Dynamics are the amount of difference, or the dynamic range, between the softest sound you hear in your mix and the loudest. To even out the dynamics in a mix, a tool called a compressor is used.

SELECT the type of compression you want.

- **OFF:** Compressor bypassed.
- **LIGHT/MEDIUM/HEAVY:** Differing amounts of compression will be applied to the dynamic range of your mix. Try each setting and see which one sounds best.



ROTATE the ADJUST knob to adjust the amount of compression applied to the mix.

MASTER REVERB

When you hear instruments in an acoustic space such as a concert hall, theater or stadium, you are always hearing the natural reverb of the environment.

Livemix allows you to apply a reverb effect to your stereo mix, in order to make it sound more natural and mimic these effects.

SELECT one of the four Reverb effect settings that sounds best to you.

- **OFF:** Reverb bypassed.
- **SMALL ROOM/MEDIUM ROOM/LARGE ROOM:** The effect will become heavier and denser sounding as the selected room gets larger. Experiment to see what sounds best to you.

ROTATE the ADJUST knob to fine tune the amount of reverb applied to the mix.



MASTER OUTPUT

The Master Output options allow you to select the type of output you will be using (stereo or mono), as well as adjust settings that pertain to the overall volume of your mix.

HEADPHONES STEREO VS. BALANCED MONO

This setting affects how the 1/8" jack (on the front of the unit) and the 1/4" jack (on the back of the unit) output audio. The jacks on the personal mixer can be configured for a Stereo or a Mono mix.

Select Headphones Stereo if using headphones/in-ear monitors or select Balanced Mono if sending the output to floor monitors.

MUTE MASTER OUTPUT

To mute the master output, PRESS Mute Master Output. When enabled, a red indicator will flash in the Status Bar.

You can also enable Mute Master Output by PRESSING and HOLDING down the Master Volume knob for 3 seconds.

There are three ways to cancel Mute Master Output:

1. Turn the Master Volume Knob.
2. De-select Mute Master Output.
3. PRESS and HOLD down the Master Volume Knob for 3 seconds.

VOLUME LIMIT

The headphone amplifiers in Livemix personal mixers are high performance amplifiers. The Volume Limit reduces the amount of overall volume available with the Master Volume knob. The Volume Limit will not affect the sound of your mix.

The volume limit will stop before it gets zero. When the Master Volume reaches the set Volume Limit threshold, the Master Volume overlay on the Channel Overview will read "At Volume Limit."

PEAK LIMITER

The Peak Limiter is a compressor that sets a hard limit and stops sound from exceeding that limit. This function will protect the system and your ears from overly loud transients or other loud audio levels. The Peak Limiter can affect the sound of your mix.



NOTE:

If using Livemix in Balanced Mono, the Intercom and Ambient Mics will be turned off. This is to prevent feedback and team communications from being heard through floor wedges.

NOTE:

When the mix is set to Balanced Mono, BOTH the front and back audio jacks will be set to mono. Channel panning adjustments will not be heard.

GROUPS, STEREO GROUPS, ME GROUP

It is often advantageous to group channels together so you can make volume adjustments to all the channels in the group at once. The most common channels to group are drums, stereo instruments (like keyboards) and background vocals.

The CS-DUO allows you to create up to five standard groups. You can also link two adjacent channels in stereo pairs. Up to 12 stereo pairs are available.

The ME group differs from other groups in that it has a dedicated knob. The ME Knob allows you to quickly adjust the volume of your own "group". If you are singing and playing guitar, you may want to assign these channels to the ME Knob.



CONFIGURE A GROUP

1. PRESS the ME knob to access Group Setup.
2. SELECT your channel(s). To see additional channels, PRESS Show 13-24.
3. PRESS Show Next Group and SELECT channels to add to each group. Repeat for each group.
4. PRESS X to exit.

CONFIGURE STEREO PAIRS

1. PRESS the ME knob to access Group Setup.
2. PRESS Show Next Group until the heading reads Stereo Pair Setup.
3. Select the Channel you wish to place in a stereo group. Channels can only be in one group and Stereo Pairs are always adjacent channels starting with the odd channel (ie. 1 and 2, 11 and 12).
4. PRESS X to exit.

ADJUSTING THE VOLUME OF A GROUP

To adjust the volume of a group, select any one of the channels in the group and increase or decrease volume with the ADJUST knob. The grouped channels will be gray. The selected channel in the group will have a white outline.

NOTE:

Although the channels are selected as a group, the selected channel is indicated by a white outline. Volume adjustments affect the whole group. Pan adjustments only affect the selected channel.

NOTE:

A channel can be in one group at a time. If you attempt to group a channel that is part of another group, you will need to verify that you want to move that channel to the new group.

ADJUSTING THE VOLUME OF THE ME GROUP

To adjust the volume of the ME group, ROTATE the ME knob.

ADJUSTING THE VOLUME OF A SINGLE CHANNEL IN A GROUP

From the Channel Overview:

1. SELECT the channel to adjust. A white border will outline the channel.
2. LONG PRESS the ADJUST knob to temporarily remove the channel from the group. The white outline of the selected channel will flash.
3. Use the ADJUST knob to adjust the volume of the channel.
4. PRESS the ADJUST knob to return the channel to the group.

From the Single Channel View temporarily remove the channel from a group:

1. LONG PRESS the light blue group button. It will start flashing.
2. Use the ADJUST knob to adjust the volume of the channel.
3. PRESS the flashing group button to return the channel to the group.



VOLUME SCALING

Volume Scaling allows you to turn all the channels either up or down at one time. This is useful if you find you are at the maximum gain across many channels and need to adjust them all down.

1. There are two ways to access the Volume Scaling feature. LONG PRESS the ADJUST knob for 5 seconds or SELECT Mix Tools > Local Mix Options > Adjust all channels. The channels will turn gray with a flashing white border to indicate they have been temporarily grouped.
2. Use the ADJUST knob to adjust the volume of all the channels at once.
3. PRESS the ADJUST knob to return end volume scaling.

LCD BRIGHTNESS

This feature allows you to change the brightness of the Livemix LCD screen as well as turn Auto Dim on or off.

To change the brightness of the LCD screen, turn the ADJUST knob.

The Auto Dim feature will cause the LCD screen to reduce in brightness after 15 seconds of inactivity. Touching the screen or any control will bring the screen back to the preset brightness level. Turn the Auto Dim Off if you do not want the screen to automatically dim.

Please see the Global Dim LCDs section for information on how to dim all the LCDs in the system simultaneously.



MUTE/SOLO OPERATION

In Default Mute/Solo mode, Mute and Solo functions are accessed from the Single Channel View. The Quick Mute or Quick Solo functions allow you to extend either the mute or solo functionality to the Channel Overview.

When Quick Mute or Quick Solo is selected, channels can be muted or soloed on the Channel Overview. By selecting a channel and then pressing the same channel again, the channel will be muted or soloed, depending on which Quick function is selected.



To use the Quick Mute function:

1. PRESS Mute/Solo Operation in Local Mix Options.
2. PRESS Quick Mute.
3. PRESS X three times to exit to the Channel Overview.
4. You may now quickly mute a channel by selecting it and then a second time to mute it. PRESS the channel again to hear the other channels.

NOTES:

You can always access Mute and Solo functions from the Single Channel View. Quick Mute and Solo functions provide quick access to these from the Channel Overview.

Channels in a group will be muted or soloed as a group.

To use the Quick Solo function:

1. PRESS Mute/Solo Operation in the Local Mix Options.
2. PRESS Quick Solo.
3. PRESS X three times to exit to the Channel Overview.
4. You may now quickly solo a channel by selecting it and then a second time to solo it. PRESS the channel again to hear the other channels.



SAVING & LOADING A PERSONAL MIX

Saving a mix makes not only saves you time setting up for your next performance, but it also helps identify your personal mixer for use with MirroMix and SoftRoute. Save and load several versions of your personal mixes to one of 24 internal save slots or up to 24 save slots on an external USB device.

TO SAVE A PERSONAL MIX:

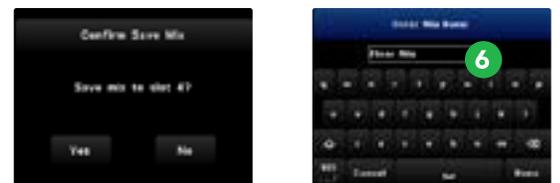
1. SELECT Mix Tools from the Channel Overview.
2. PRESS Load/Save Personal Mix.
3. SELECT a slot to save your mix. PRESS Slots 13-24 to access additional save mix slots.
4. PRESS Save Selected Personal Mix.
5. PRESS Yes to confirm.
6. ENTER a name for the mix. Each mix name can contain 12 characters. Name the mix as descriptive as possible since other users may mix on the same personal mixer.
7. PRESS Done.
8. PRESS X to return to Channel Overview.

To save a mix to a USB device, insert a USB flash drive into the slot on the personal mixer. When the device is recognized, the USB Storage button will appear on the Load/Save screen. SELECT the USB Storage button and follow steps 3-8 above.

TO PERFORM A QUICK SAVE

To quickly save changes to a mix without going to the naming screen:

1. PRESS Mix Tools from the Channel Overview
2. LONG PRESS the Load / Save Personal Mix button for 2 seconds.



NOTE:

Personal mixes store Channel Volume/Pan, Groups, Aux Input Settings and Master Output Settings (Stereo/Mono Mode, EQ/HPF/Compressor & Reverb, Volume & Peak Limiter, Mute Master Output). If changes are made, an asterisk (*) will appear by the mix name on Load/Save Personal Mix button, in Mix Tools.

TO LOAD A PERSONAL MIX:

1. SELECT Mix Tools from the Channel Overview.
2. PRESS Load/Save Personal Mix.
3. SELECT a mix. PRESS Slots 13-24 to access additional saved mixes.
4. PRESS Load Selected Personal Mix.
5. PRESS X to return to Channel Overview.

To load a mix from a USB device, insert a USB flash drive into the USB slot on the personal mixer. When the USB device is recognized, the USB Storage button will appear on the Load/Save screen. SELECT the USB Storage button and follow steps 3-5 above.



WARNING:

When a personal mix is loaded, it replaces the current mix. Save the current mix before loading another mix.

MIRRORMIX® REMOTE MIXING

MirrorMix allows you to hear and make changes to other personal mixes in the system remotely. This allows more experienced users to aid others when necessary. It is a great tool for front of house engineers, for training performers on personal mixing or even for using Livemix as a monitor desk.

To access MirrorMix Remote Mixing:

1. PRESS Mix Tools
2. PRESS MirrorMix Remote Mixing

The LCD touchscreen will display the available mixes. Each hardware port on the MIX-16 or MIX-32 supports 2 mixes: *MIX A* and *MIX B*. These are identified by the Port number and the loaded or saved mix name of the remote personal mixer.

MIX A (blue) will have an "A" after the port number, and be colored blue in the MirrorMix selection box.

MIX B (red) will have a "B" after the port number and be colored red in the MirrorMix selection box.

NOTE: If you have CS-SOLOs, a single CS-SOLO will be *MIX A*. When cascading two CS-SOLOs, the first CS-SOLO is *MIX A*. The second CS-SOLO is *MIX B* (connected to the Thru Port of the first CS-SOLO).

GLOBAL MIRROR MIX

MirrorMix can be used to send a starter mix to all the connected personal mixers at once. When no mix is selected, the orange button will read Global MirrorMix. PRESS this button to access Global Mirror Mix features.

PUSH GROUPS TO ALL

Sends all of the multi-channel and stereo pair grouping settings from the local personal mixer to ALL connected units. This includes the Me Group.

1. PRESS Push Groups To All
2. PRESS Yes to confirm



PUSH SAVED MIX TO ALL

To send a Saved Mix from the local personal mixer to all connected personal mixers:

1. PRESS Send Saved Mix to All
2. PRESS Yes to confirm
3. SELECT a Saved Mix to send to all personal mixers
4. PRESS Push Selected Personal Mix

PUSH CURRENT MIX TO ALL

Send the currently loaded mix from the local personal mixer to all connected mixers.

1. PRESS Push Current Mix To All
2. PRESS Yes to confirm

AUDITION A REMOTE MIXER

When you SELECT a Port/MIX Name, you will immediately be able to hear or audition the remote mix. The Global MirrorMix button will change to MirrorMix and the Status Bar will reference the selected mix.

TIP: It is good practice to save mixes using a name or instrument. The mix name and port number are visible on the Mix Tools screen of the remote mixer. You may need the performer to indicate what port they are connected to by referencing this screen.



MIRRORMIX FUNCTIONS

After selecting a Port/MIX Name to audition, PRESS MirrorMix. The screen will change to orange to indicate you are now mixing the remote mixer.

Multiple options are available on the MirrorMix screen. The "PUSH" functions can help setup a remote users personal mix. The long MirrorMix Port button allows direct interaction with the remote mixer.

PUSH CURRENT MIX

PRESS Push Current Mix to send your current mix to the remote mixer. This includes your volume and pan settings.

PUSH MASTER OUTPUT SETTINGS

PRESS Push Master Output Settings to send your master output settings to the remote mixer. This will send all your Master Output Settings, including EQ, Dynamics, Reverb and other settings.



PUSH GROUPS

PRESS Push Groups to send your current group settings to the remote mixer.

PUSH SAVED MIX

PRESS Push Saved Mix to send a saved mix from your personal mixer to the remote mixer. Available saved mixes will become visible. This is helpful to send a starter mix to the remote mixer (i.e. Drums, Vocals, Leader, Keyboard, etc.). PRESS Push Selected Personal Mix to send the mix.

INTERCOM FUNCTIONALITY IN MIRRORMIX

The Intercom functions differently in MirrorMix mode. When any mix is being auditioned or has been selected for MirrorMixing, pressing the Intercom button will communicate directly to the remote mix user ONLY. Use the intercom to verify the mix is working for them. If the remote user uses the Intercom while being MirrorMixed, the Intercom functions normally and broadcasts to the entire Livemix system.

MIRROR-MIXING A REMOTE MIXER

PRESS the long MirrorMix button at the bottom of the MirrorMix Function's screen. The Channel Overview of the remote mixer is now visible.

To exit MirrorMix, PRESS X or SELECT Exit MirrorMix from Mix Tools.

The mix name and port number are referenced in the Status Bar.

NOTE:

While a mix can be pushed to a remote personal mixer, the mix needs to be saved on the remote personal mixer. On the other hand, a remote user's settings can be saved to your mixer when MirrorMixing.

WHAT ELSE CAN I DO WITH MIRRORMIX?

MirrorMix remote mixing opens up tremendous possibilities for the Livemix system.

- Front of House engineers can help performers craft better mixes.
- Front of House engineers can load a mix remotely and then setup the ME group, allowing the stage musicians to focus more on the performance and audience.
- Studio engineers can customize mixes for studio performers, giving them the perfect cue mix.
- Use Livemix as a full monitor desk replacement. With MirrorMix, monitor engineers can hear exactly what stage performers hear. Intercom directly to customize mixes as needed.
- Use Livemix to mix floor wedges.
- Remotely enable Mute Master Output on remote mixers that aren't being used on the stage or in the studio.

NOTE:

When using MirrorMix to adjust another mix, the Ambient Mics, Intercom and Aux Input (when not in Shared Mode) are local to your mixer, not the remote mixer. Changes to the LCD brightness will impact your mixer and not the remote mixer.

GLOBAL CONFIGURATION

The Livemix system is set up with the personal mixer. To enter Global Configuration, SELECT Global Configuration in Mix Tools. This page has multiple functions related to the entire Livemix system.

GLOBAL OPTIONS

This menu contains additional Global Configuration Options. *Please see the Global Options section for details on the features below.*

- Set Global Clock
- Global Mute
- Passcode
- Global Dim LCDs

LIVEMIX VERSION INFO

This displays firmware version information and allows for firmware updating.

INPUT SELECT (IF LM-DANTE-EXP INSTALLED)

If a LM-DANTE-EXP is installed, the Input Select button will appear. This allows you to select analog or Dante input.

DIGITAL CONFIGURATION (IF LM-DANTE-EXP INSTALLED)

FOR FIRMWARE VERSIONS PRIOR TO V4.0

If an LM-DANTE-EXP option card is installed, the Digital Configuration button will appear. This function assigns devices and channels in a digital network.

FOR FIRMWARE VERSIONS AFTER V4.0

All routing is performed with Audinate's free Dante Controller (available here: <https://www.audinate.com/products/software/dante-controller>). The Digital Configuration menu option will not be present.

DA-816 SOFTRROUTE™

The DA-816 is an analog output rack unit for sending personal mixes to external devices like wireless in-ear monitors. This allows you to use SoftRoute to assign personal mixes to the DA-816 outputs.

LOAD AND SAVE A GLOBAL TEMPLATE

The Global Template contains all the channel names, global settings and channel effect information for the whole system. Save all these parameters for quick recall at a later session.



NOTE:

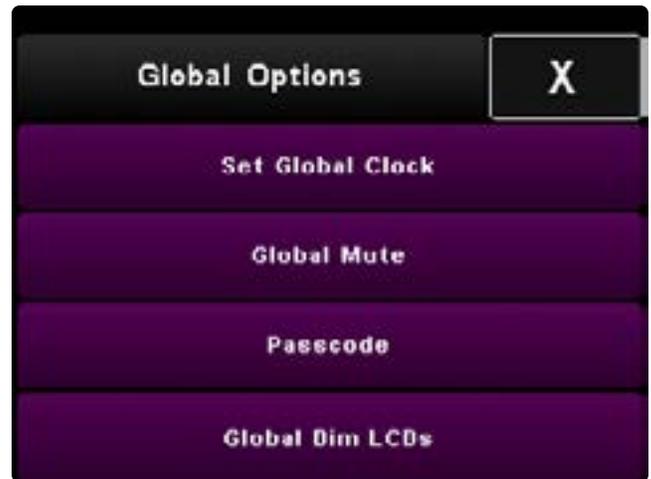
The Global Settings screens are purple to differentiate them from mixing screens. Global Settings apply to the entire system and will impact all the personal mixers in the system.

GLOBAL OPTIONS

SET GLOBAL CLOCK

SELECT Set Global Clock to set the time of day and calendar date for the system.

- PRESS any of the six time/date fields to adjust it, or alternatively, PRESS the ADJUST knob to cycle through the six fields.
- The selected field will turn gray. ROTATE the ADJUST knob to change the value of that field.
- PRESS X when finished.



The date and time data will be written to any mixes or templates saved to a USB flash drive.

GLOBAL MUTE

It may be desirable to be able to mute channels for everyone. When Global Mute is ON, any channel that is muted will be muted globally.

If using Livemix as a monitor desk for example, this would allow you, or any other user, to mute a channel for everyone at one time.



1. PRESS Global Mute in Global Options.
2. SELECT On to enable the Global Mute feature, or Off for mute to function locally only.



PASSCODE

Livemix allows you to protect certain global configuration functions with a passcode. You can passcode protect the Global Effect settings, Global Configuration, Global MirrorMix settings, or any combination of the three.

To set up a passcode:

1. PRESS Passcode in Global Options.
2. Enter a 4 number passcode that is easy to remember.
3. PRESS Clear to start over.
4. PRESS Enter to accept.
5. You will be prompted to reboot the system after leaving the Passcode screen, by pressing X. PRESS Continue to set the passcode and reboot.

What happens if I forget or don't know the passcode?

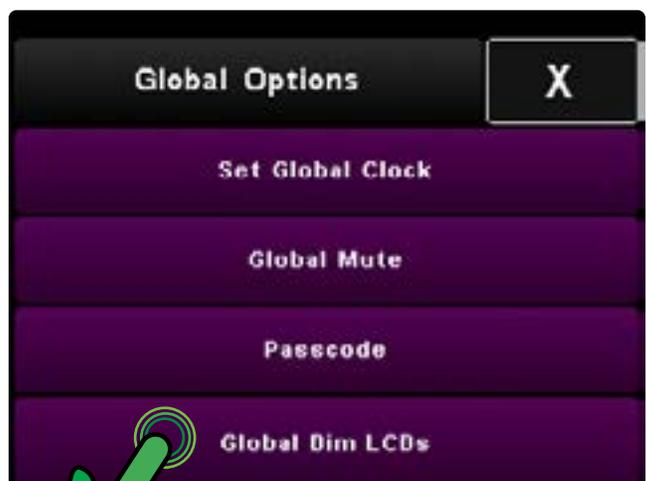
To remove the passcode, LONG PRESS the ME Knob for three seconds on any screen that prompts you to enter the passcode. After three seconds, release the ME Knob and then hold it for three seconds more.

The passcode removal screen will appear. SELECT Yes to reboot the system, removing passcode protection.

GLOBAL DIM LCDs

The Global Dim LCD feature allows you to dim the LCD screens of every Livemix personal mixer at once. This is useful to reduce the ambient light on stage after a performance. Each mixer can be brought back to the preset brightness, by touching the screen or adjusting a knob.

PRESS Global Dim LCDs in Global Options, to dim all LCD screens at once.



LIVEMIX VERSION INFO

PRESS Livemix Version Info to view firmware versions for the CS-DUO, MIX-16/MIX-32, Dante option card and DA-816. Updates for these are available here: <https://www.digitalaudio.com/support>.

The CS-DUO firmware listed here is for the local personal mixer. All CS-DUOs (and CS-SOLOs) must be updated individually.

The MIX-16/MIX-32, DA-816 (if installed), and Dante option card only need to be updated once.

You may initiate a firmware update by pressing the "Update Firmware" button. *Detailed firmware update information is in the Livemix Firmware Update section.*

DANTE NETWORK INFO

LONG PRESS the Dante Version cell to display Dante network configuration information. This is helpful for troubleshooting Dante connections.

AFTER LIVEMIX FIRMWARE V4.0 UPDATE

If the CS-DUO has been updated to firmware v4.0, the Dante version info will not be visible on the CS-DUO unit. Use the Dante Controller to determine the version of the LM-DANTE-EXP or Dante Firmware and network status information.

- In Dante Controller, enter Device View from the Devices menu.
- Select your MIX-16 or MIX-32 from the dropdown selector.
- Navigate to the Status tab.

This Status tab will have all the LM-DANTE-EXP or LM-DANTE-EXP2 version info as well as Dante network information. You can also find the device IP and MAC address and clock synchronization information which can be helpful for troubleshooting.

Livemix Version Info		X
CS Version	Bootloader: 1.01 Firmware: 2.00	Update Firmware
MIX-16/32 Version	Bootloader: 1.20 Firmware: 2.00	Update Firmware
DA-816 Version	Firmware: 1.10 Firmware: 1.10	
Dante Version	15.2.24.163	

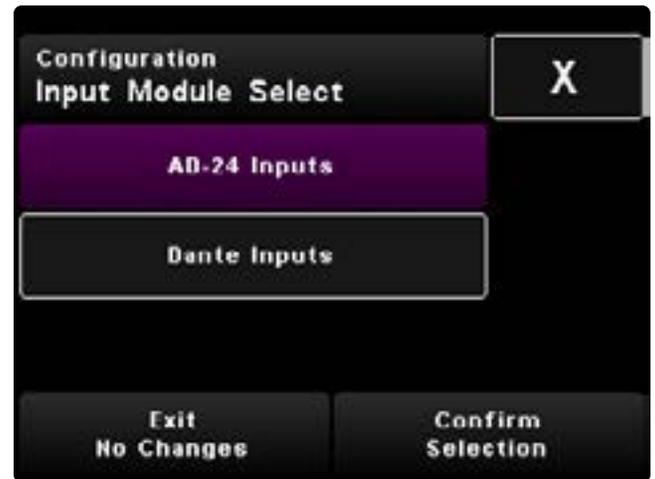
NOTE:

The CS-SOLO and CS-DUO use the same firmware. All units must be updated for maximum compatibility and consistency.

INPUT SELECT

If the LM-DANTE-EXP option card is installed in the MIX-16 or MIX-32, the Input Select button will be visible. This function will tell the system to accept audio from either the AD-24 or the Dante Network.

1. From Global Configuration, SELECT Input Select.
2. You will be prompted with a warning. PRESS Continue.
3. SELECT AD-24 for analog inputs or Dante Inputs to receive audio from the Dante Network.
4. PRESS Confirm Selection.



V

If the LM-DANTE-EXP option card is installed in the MIX-16 or MIX-32, Digital Configuration will be visible. This function configures Livemix to accept audio from a Dante network.

DANTE NETWORK CHANNEL SETUP

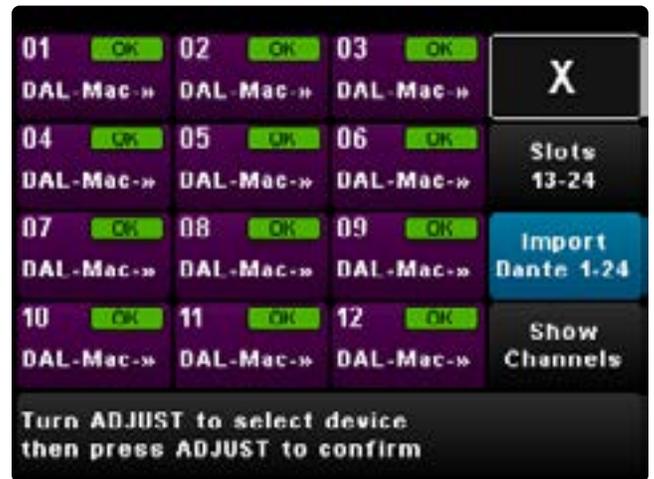
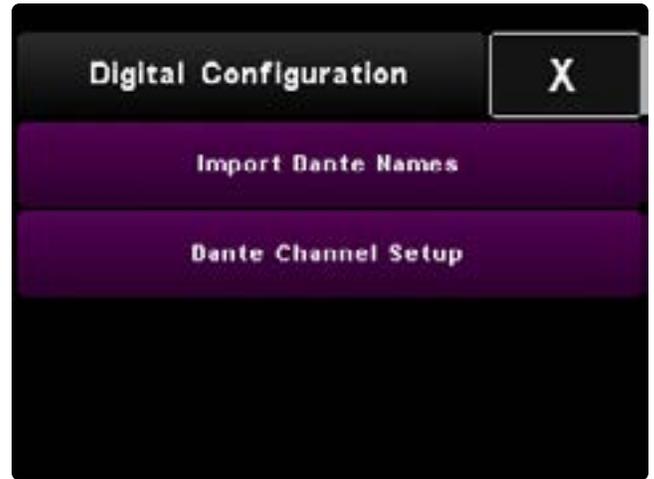
Configuring Livemix for use with a Dante network can be performed on any Livemix personal mixer. You can also use Dante Controller software provided by Audinate on a Windows or Mac OS X computer. Consult the user guides of your Dante enabled devices for information on how each device will transmit/publish channels to the Dante network.

AUTO ASSIGN DANTE CHANNELS 1-24

With Dante Channel Setup, easily assign the first 24 networked channels of any Dante device.

1. From the Global Configuration page, SELECT Digital Configuration.
2. You will be prompted with a warning. PRESS Continue.
3. SELECT Dante Channel Setup.
4. PRESS Import Dante 1-24. The button will flash to indicate the import feature is active.
5. Turn the ADJUST knob to select a device on the Dante network.
6. PRESS the ADJUST knob to confirm the device selection.

Your Livemix system will now be subscribed to the first 24 channels of the chosen Dante device.



MANUALLY ASSIGN DANTE CHANNELS

Livemix provides the ability to import the first 24 channels from a connected Dante device, however you may want to manually subscribe to channels on a Dante network. The Dante Channel Setup allows you to connect to multiple devices or to change the routing of connected devices. An example of this would be: connecting Dante transmitter channel 24 from a console to channel 4 on the Livemix personal monitor system.

1. From the Global Configuration screen, PRESS Digital Configuration.
2. You will be prompted with a warning. PRESS Continue.
3. PRESS Dante Channel Setup to enter Dante setup configuration.
4. SELECT a Channel to assign to a Dante channel. A pop-up will appear on the bottom.
5. Select a Device by rotating the ADJUST knob. PRESS the ADJUST knob to accept a selected device. If you have previously assigned a device to this channel, the selector may be on Channel Select. If so, PRESS the ADJUST knob to change to the Device Selector.
6. Select a Channel on the selected device by rotating the ADJUST knob. After a few seconds, the channel will be automatically selected.
7. Repeat steps 5-7 as necessary. Press Slots 13-24 to access additional channels.
8. PRESS Accept Assignments to accept the assigned channels.



DEVICE/CHANNEL VIEW TOGGLE

The Show Device/Show Channels button toggles between the Device view and the Channel view. By default, the names of the assigned channels are visible. PRESS Show Devices to see which devices are assigned to each Livemix channel. PRESS Show Channels to toggle to the Show Devices view.

IMPORT DANTE NAMES

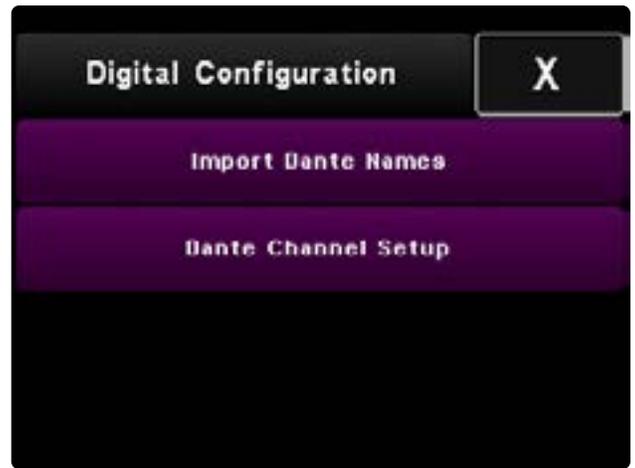
If you are using Livemix with the Dante Controller or a system that has published Channel Labels to the network, you can use those labels as the Livemix channel names.

To import Channel Labels from the Dante network:

1. PRESS Global Configuration in Mix Tools.
2. SELECT Digital Configuration.
3. You will be prompted with a warning.
PRESS Continue.
4. PRESS Import Dante Names.
5. PRESS Yes to copy the Dante Channel names to the Livemix channel names.

SAVING DANTE CHANNEL DATA

To ensure that Dante channel setup and names are saved, save the Global Template after changes are made. See the *instructions for Saving a Global Template* section.



NOTE:

Not all Dante network devices use channel labels. Some only publish the number of the channel.

LIVEMIX FIRMWARE UPDATE V4.0

Livemix firmware v4.0 introduces compatibility with Audinate's Dante Domain Manager. Compatibility with Dante Domain Manager requires that all subscription setup and audio routing be performed with Dante Controller.

Once updated to v4.0, the CS-DUO will no longer be able to setup Dante channels or import Channel Names.

Additionally, The LM-DANTE-EXP, LM-DANTE-EXP2, and Dante network version information will only be accessible through the Dante Controller.

SETUP USING DANTE CONTROLLER

The Dante Controller has many features to setup and troubleshoot the Dante Network. Below are some simple setup tips to help get started. Complex Dante installations are beyond the scope of this document.

ASSIGNING A CHANNEL WITH DANTE CONTROLLER

To assign a channel, use the Routing tab on Dante controller. Click on the intersection of the TRANSMITTER (Source) on the top horizontal axis and the RECEIVER (Destination) on the vertical axis. A green check mark will indicate the connection is established and functioning. Click the intersection a second time to UNSUBSCRIBE the channel.

Once setup, it is a good idea to SAVE your configuration with the FILE menu.



SETTING THE SAMPLE RATE

In the Device View of Dante Controller, use the Device Config tab to set Livemix to the same sample rate as other components of the Dante Network.

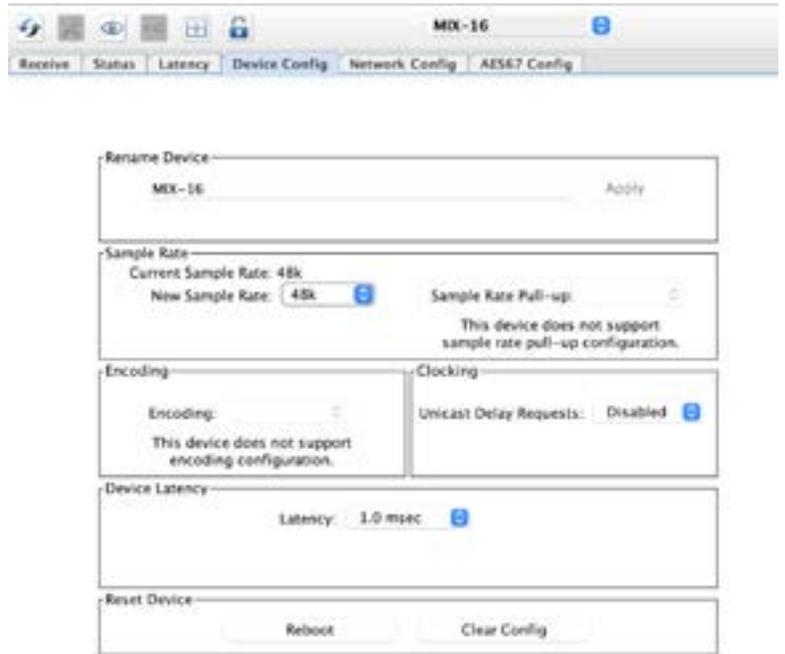
You can also change the name of your Livemix MIX-16 or MIX-32 device on this screen.

CLOCK SETUP

In digital audio systems, a clock is used to make sure each component delivers audio at the same time. When there is a clock issue or mismatch, pops and clicks will be heard in the audio.

The Dante Network will automatically pick the strongest clock source, but in Dante Controller, a Preferred Leader can be selected.

In a system with a mixer, console, or digital interface, it is recommended that the non-Livemix product be designated the Preferred Leader.



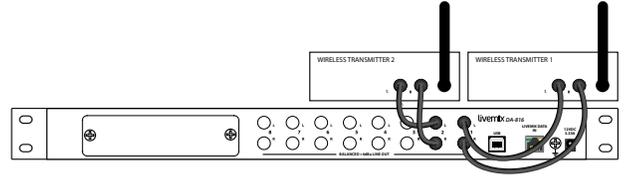
Routing	Device Info	Clock Status	Network Status	Events						
Device Name	Sync	Mute	Clock Source	Domain Status	Primary v1 Multicast	Primary v2 Multicast	Secondary v1 Multicast	Secondary v2 Multicast	Preferred Leader	Enable Sync To External
MIX-16	<input checked="" type="checkbox"/>		Dante	N/A	Leader	Disabled	N/A	N/A		<input checked="" type="checkbox"/>
Mixer	<input checked="" type="checkbox"/>		Dante	N/A	N/A	N/A	N/A	N/A	<input checked="" type="checkbox"/>	N/A

NOTE

When connecting to a larger Dante Network, Dante Controller provides additional configurations such as Unicast/Multicast and Latency settings. These are generally not necessary unless configuring a large network.

DA-816 SOFTROUTE™

The DA-816 provides 8 stereo balanced outputs for sending personal mixes to wireless in-ear transmitters, powered monitors or powered house speakers. See the *DA-816 User Guide* for more information.



From the Global Configuration screen, PRESS DA-816 SoftRoute to enter the DA-816 setup. You can enter these screens even if you do not have a DA-816 connected. Assignments will be saved with the Global Template.

NOTE: A Livemix personal mixer must be plugged into a MIX-16 or MIX-32 port to route audio to an external device. If a mix that is assigned to a DA-816 output is physically disconnected or not present, audio will not be routed.

OUTPUT ID FEATURE

The Output ID feature sends a test tone to the selected DA-816 Output. This allows you to verify that the desired external device is connected to the selected output.

1. PRESS Output ID. The Output ID button will flash.
2. SELECT an Output. The cell will turn gray and the corresponding LED on the DA-816 front panel will flash and a test tone will be sent to output. The Output ID feature can be used with multiple outputs at the same time.
3. PRESS Output ID again to exit this mode.



NOTE:

Observe the VU meters on the connected wireless transmitters or devices. The DA-816 plays audible tone beeps in this mode to confirm the intended signal chain is setup properly.

The Output ID is a great way to:

- Quickly ensure musicians are given the correct wireless body packs and are assigned to the correct personal mixer on stage.
- Test which device is connected to the DA-816 outputs.
- Verify proper connection from DA-816 to external devices.

ASSIGN A MIX TO DA-816 OUTPUT

The 8 purple slots represent the available outputs. When a mix is assigned to one or more of the outputs, the Port/Mix Name (if available) will be visible. Saving personal mixes with the performer's name or instrument helps identify easier.

From the Select DA-816 Output screen, SELECT an output you wish to assign.



1. The screen will change to display the MIX-16/MIX-32 Ports. Each slot is labeled with the loaded or saved mix name (1) and Port (2). If a mix is not loaded, the mix name will be blank (3). *It is possible to route Control Surface Ports even if a personal mixer is not connected but audio will not be present on that output.*
2. Select a CS Port to assign to the output. The assignment will be visible on the DA-816 Output screen.

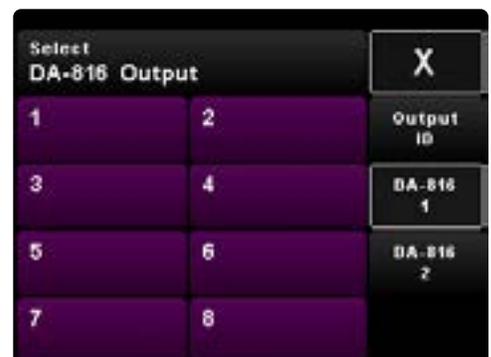
If you are using two DA-816s, you will be able to select the outputs on the first or second DA-816. The selected DA-816 will have a white border.



UNASSIGN AN OUTPUT

To unassign a previously assigned output:

1. SELECT the DA-816 Output (1-8) from the DA-816 Output screen.
2. PRESS Unassign Output. The Output is now unassigned.



SAVING & LOADING A GLOBAL TEMPLATE

Load/Save Global Template functions the same as loading and saving a personal mix. Saving a Global Template allows you to recall it when necessary and reduces the time it takes to setup the system.

Each Livemix system contains 24 internal save slots and also allows up to 24 save slots on an external USB device. These are different from the personal mix save slots.

TO SAVE A GLOBAL TEMPLATE:

1. PRESS Global Template Load /Save.
2. SELECT a save slot. PRESS Slots 13-24 for additional save locations.
3. PRESS Save Selected Channel Setup.
4. PRESS Yes to confirm.
5. ENTER a name for the template.
6. PRESS Done.
7. PRESS X twice to Exit to the Channel Overview.

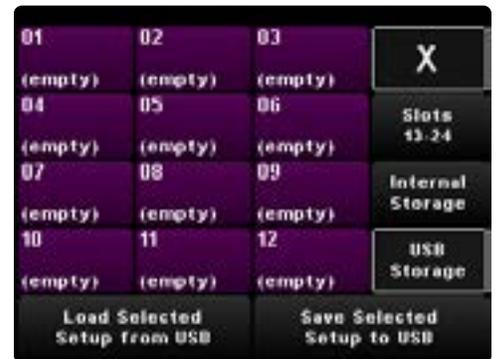
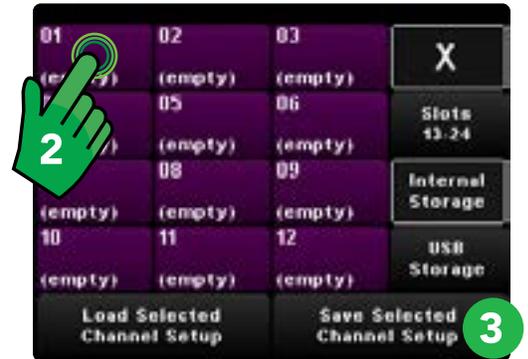
To save a template to a USB device, insert a USB flash drive into the USB slot on the personal mixer. When a USB device is recognized, the USB Storage button will appear on the Load/Save screen. SELECT USB Storage and follow steps 2-7 above.

TO LOAD A GLOBAL TEMPLATE:

1. PRESS Global Template Load /Save.
2. SELECT a template to load. PRESS Slots 13-24 for additional saved templates.
3. PRESS Load Selected Channel Setup.
4. PRESS X twice to Exit to the Channel Overview.

To load a template from a USB device, insert a USB flash drive into the USB slot on the personal mixer. When a USB device is recognized, the USB Storage button will appear on the Load/Save screen. SELECT USB Storage and follow steps 2-4 above.

Please note, after updating to Livemix firmware v4.0, loading a Global Template will not load Dante subscription information. Please use the Dante Controller to subscribe channels.



NOTE:

Global Templates save: Channel Naming, Channel EQ/Dynamics Presets, Global Options (Global Mute, DA-816 SoftRoute Mix Assignments Input Selection (Analog or Dante) and Dante device subscriptions (firmware versions prior to v4.0). Global Template Slot 24 (Default Setup) resets all of the above Global Settings.

LIVEMIX FIRMWARE INSTRUCTIONS

Firmware updates add features and ensure compatibility with all parts of the Livemix system. Checking the firmware version of your Livemix system is detailed in the “Livemix Version Info” section. Please visit <https://www.digitalaudio.com/support> to verify if your Livemix system has the most current version, as listed on the Livemix Version Info screen on all CS-SOLOs and CS-DUOs.

The latest Livemix firmware update (Version 4.0) makes Livemix compatible with the Dante Domain Manager and ensures continued compatibility with Livemix system components.

When updating to Version 4 setting up Dante subscriptions will be done entirely with the free Dante Controller (<https://www.audinate.com/products/software/dante-controller>) from Audinate.

Please note, after this update, the CS-DUO or CS-SOLO will no longer be used to subscribe to Dante channels. Please use Audinate’s Dante Controller to route Dante Channels

PREPARING A USB FLASH DRIVE

To update the CS-SOLO or CS-DUO, you will need a USB flash drive that has been FAT formatted. Other file systems will not work.

CS-SOLO/CS-DUO UPDATE INSTRUCTIONS

TO UPDATE THE FIRMWARE OF THE CS-SOLO/CS-DUO:

1. Download the latest firmware from our Support page: <https://www.digitalaudio.com/support>.
2. Unzip the firmware zip file and copy the LMUPDATE folder to the root directory of a USB flash drive. Please make sure the LMUPDATE folder is not in another folder.
3. Insert the FAT formatted USB flash drive into the USB port on the personal mixer. The firmware update process will start automatically.
4. Press YES to begin or NO to cancel. Once the firmware update has started, do not turn off the power to the unit as it may cause damage.
5. When prompted, remove the USB flash drive.
6. The CS-SOLO/CS-DUO will now update. When the update is complete, the unit will reboot.

NOTE:

For updates to the MIX-16/MIX-32 and the CS-SOLO and CS-DUO, the MIX-16/MIX-32 should be updated first.

Some updates take a while to complete. If updating the MIX-16/MIX-32 from the CS-SOLO or CS-DUO, it works best to have only one personal mixer connected to the system.

Perform this update on each CS-SOLO and CS-DUO in the system for maximum compatibility and consistency.

CS-SOLO/CS-DUO FIRMWARE UPDATE TROUBLESHOOTING

If the firmware update process doesn't start after following the steps above, you can enter firmware update mode by doing the following:

- Unplug the network cable to turn the CS-SOLO off.
- Insert the USB drive with the firmware, downloaded per the instructions in steps 1 and 2 above.
- CS-SOLO: PRESS and HOLD the Intercom button on the CS-SOLO. Continue to HOLD the Intercom button and reconnect the network cable to power the CS-SOLO on.

CS-DUO: PRESS and HOLD the A and B buttons on the CS-SOLO. Continue to HOLD the buttons and reconnect the network cable to power the CS-DUO on.

- Follow firmware update instructions on the screen.

MIX-16/MIX-32 FIRMWARE UPDATE INSTRUCTIONS

The MIX-16/MIX-32 can be updated with a CS-SOLO/CS-DUO or a PC application.

You can update with a CS-SOLO or CS-DUO if:

- The MIX-16/MIX-32 serial number is greater than 12-02-01030
- The MIX-16/MIX-32 firmware is 1.01 or above
- The CS-SOLO/CS-DUO firmware is 1.31 or above
- The MIX-16/MIX-32 serial number is less than 12-XX-07000



Livemix Version Info		X
CS Version	Bootloader: 1.01 Firmware: 2.00	Update Firmware
MIX-16/32 Version	Bootloader: 1.20 Firmware: 2.00	Update Firmware
DA-816 Version	Firmware: 1.10 Firmware: 1.10	
Dante Version	15.2.24.163	

If your MIX-16/MIX-32 does not meet the criteria above, update with the Windows PC application. For reference, both methods are listed below.

Please Note: The latest Livemix firmware update (Version 4.0) makes Livemix compatible with the Dante Domain Manager and ensures continued compatibility with Livemix system components.

When using Livemix firmware v4, setting up Dante subscriptions will be done entirely with the free Dante Controller (<https://www.audinate.com/products/software/dante-controller>) from Audinate.

After this update, the CS-DUO or CS-SOLO will no longer be used to subscribe to Dante channels. Please use Dante Controller.

UPDATE FIRMWARE OF MIX-16/MIX-32 WITH THE PC APPLICATION:

1. Download the MIX-16/MIX-32 Update Application from <https://www.digitalaudio.com/support>.
2. Connect the USB port on the MIX-16/MIX-32 to a Windows computer.
3. Wait for MIX-16/MIX-32 drivers to fully install.
4. Run MIX-16/MIX-32 Update Application. This process may take a few minutes. Once the updater has started, a progress bar will appear. Do not turn off the power until the update is complete or you may damage the unit.
5. PRESS Finish.
6. Disconnect the MIX-16/MIX-32 from the PC and verify the update was successful by checking the firmware version with the CS-SOLO/CS-DUO.

NOTE:

If updating with the CS-SOLO or CS-DUO does not work, please use the PC Application.

Some updates take a while to complete. If updating the MIX-16/MIX-32 from the CS-SOLO/CS-DUO, it works best to have only one personal mixer connected.

NOTE ON USB UPDATING OF THE MIX-16/32

MIX-16 REV P and MIX-32 REV P (units with serial numbers greater than 12-XX-07000) can only be updated with the PC application. USB update of the MIX-16/32 is not available for units manufactured with serial numbers greater than those listed above.

UPDATE MIX-16/MIX-32 FIRMWARE WITH A CS-SOLO OR CS-DUO:

1. Download the latest firmware: <https://www.digitalaudio.com/support>.
2. Unzip the firmware zip file and copy the LMUPDATE folder to the root directory of a FAT formatted USB flash drive (FAT formatting is required). Please verify the LMUPDATE folder is not in another folder.
3. Go to Livemix Version Info by pressing Mix Tools, Global Configuration and then Livemix Version Info.
4. PRESS Update MIX-16/MIX-32 Firmware.
5. PRESS Yes to update, or No to cancel.
6. Insert USB flash drive containing the update, when prompted. PRESS Continue or Exit to cancel. Once the update has begun, do not turn off the power to the MIX-16/MIX-32 or you may damage the unit.

ACCESSORY: FP-2 FOOT PEDAL

The optional FP-2 Foot Pedal accessory can be connected to the ¼" TRS connector on the Livemix personal mixer rear panel. The foot pedal allows hands-free mix adjustment or intercom activation.



SETTING UP THE FP-2 FOOT PEDAL

1. **IN:** Connect a ¼" TRS cable to the Foot switch connector to the personal mixer. Make sure the cable is a TRS and has Tip, Ring, and Sleeve. A standard TS or guitar cable will not work with the FP-2.
2. **A/B Switch (CS-DUO ONLY):** Depending on if you are using the A or B side for mixing on the CS-DUO, set this switch to *MIX A* or *MIX B*. This switch is inactive on the CS-SOLO.
3. **THRU (CS-DUO ONLY):** The FP-2 THRU connector allows you to connect two foot pedals to one CS-DUO; one for *MIX A* and one for *MIX B*. Use a TRS cable to connect the first pedal to the second pedal and assign the *MIX A* or *MIX B* switches accordingly.

NOTE:

The only foot pedal that will function with the CS-SOLO or CS-DUO is the Livemix FP-2. Third party foot switches will not work. The FP-2 is available from an authorized Digital Audio Labs dealer.

USING THE FP-2 FOOT PEDAL - STANDARD MODE

The FP-2 foot pedal is controlled by either a TAP or a HOLD on one of the buttons. A TAP is a short press, less than 1 sec in duration. A HOLD is a long press lasting more than a second.

TAP BUTTON 1: A short tap on button 1 will select the next channel on the Livemix personal mixer. When you reach channel 24 it will select the Accessory Channels then cycle back to channel 1.

HOLD BUTTON 1: A long press on button 1 will return you to the ME Group. A second long press will select channel 1. If a ME Group is not set up, holding button 1 will return you to channel 1.

TAP BUTTON 2: A short tap on button 2 will turn up the volume of the selected channel.

HOLD BUTTON 2: A long press on button 2 will reduce the volume of the selected channel. The volume of the selected channel will continue to reduce as long as button 2 is held.

HOLD BUTTON 1 & BUTTON 2: A long press on both buttons simultaneously will activate the intercom. You will need to hold both buttons down for a full second before the intercom activates. The intercom will remain active until the buttons are released.

USING THE FP-2 FOOT PEDAL IN INTERCOM MODE

If using the FP-2 with the LM-MICPRE, an additional Intercom Mode is available. This can be selected on the External Mic Setup screen in the Single Channel View of the Intercom Channel. In Intercom mode:

BUTTON 1: Functions the same as the Intercom button on the personal mixer. It will follow the Always on/Latch/Push to Take modes as selected in the External Mic Setup.

BUTTON 2: Adjusts the volume of the ME group. TAP to increase the volume. HOLD to decrease the volume.

ACCESSORY: MT-1 MOUNT

The MT-1 mic-stand mount is dual position and attaches to the bottom of your CS-DUO. It can be attached to the top of any standard microphone stand or to the vertical post. The MT-1 dual position microphone stand mount is available from your Livemix dealer.



ACCESSORY: LM-MICPRE EXTERNAL INTERCOM MIC PREAMP

The LM-MICPRE connects to the MT-1 mount and Livemix personal mixer to provide a high quality microphone preamp for using an external dynamic mic with the Livemix intercom system. For setup information, see the Intercom section or consult the Quick Start guide that ships with the LM-MICPRE.



LIVEMIX SYSTEM EXAMPLES

A Livemix system requires either an analog (AD-24) or digital input (option card), the MIX-16 or MIX-32 central mixer and at least one Livemix personal mixer. **The CS-SOLO is a single mix personal mixer and the CS-DUO is a dual mix personal mixer.** A system with CS-DUOs provides the best value. We recommend using CS-DUOs, with CS-SOLOs for use at front of house, for drummers, keyboard players or for larger venues.

ANALOG INPUT SYSTEM WITH CS-SOLOS

- 1 x AD-24 Analog Input Rack Unit
- 1 x MIX-16 Central Mixer
- 3 x CS-DUO Personal Mixers
- 2 x CS-SOLO Personal Mixers
- 5 x MT-1 Dual Position Mounts
- 1 x CBL-CAT6-100 Shielded CAT6 Cable 100' **
- 5 x CBL-CAT6-50 Shielded CAT6 Cable 50'

DIGITAL INPUT SYSTEM WITH CS-SOLOS

- 1 x MIX-16 Central Mixer
- 1 x LM-DANTE-EXP Dante option card
- 3 x CS-DUO Personal Mixers
- 2 x CS-SOLO Personal Mixers
- 5 x MT-1 Dual Position Mounts
- 1 x CBL-CAT6-100 Shielded CAT6 Cable 100' **
- 5 x CBL-CAT6-50 Shielded CAT6 Cable 50'

ANALOG INPUT SYSTEM WITH CS-DUOS

- 1 x AD-24 Analog Input Rack Unit
- 1 x MIX-16 Central Mixer
- 4 x CS-DUO Dual Mix Personal Mixers
- 4 x MT-1 Dual Position Mounts
- 1 x CBL-CAT6-100 Shielded CAT6 Cable 100' **
- 4 x CBL-CAT6-50 Shielded CAT6 Cable 50'

DIGITAL INPUT SYSTEM CS-DUOS

- 1 x MIX-16 Central Mixer
- 1 x LM-DANTE-EXP Dante option card
- 4 x CS-DUO Dual Mix Personal Mixers
- 4 x MT-1 Dual Position Mounts
- 1 x CBL-CAT6-100 Shielded CAT6 Cable 100' **
- 4 x CBL-CAT6-50 Shielded CAT6 Cable 50'

**Shielded cable between AD-24 and MIX-16/MIX-32 (and also the DA-816 if applicable) is required. CAT6 is not required, CAT5e is acceptable.

Below are some examples of what a basic system may look like.

ANALOG OR DIGITAL?

Users receiving audio from an analog source will use the AD-24. Using the TRS or DB-25 inputs, audio from the source is made available to the Livemix system.

Users receiving audio from a digital source will use the Option Card (LM-DANTE-EXP). This is an option card that is installed in the MIX-16/MIX-32 and allows the Livemix system to receive audio from a digital device or network.

PERSONAL MIXER / CONTROL SURFACE

Livemix needs at least one connected personal mixer to make a mix. Each Livemix personal mixer connects via CAT5e/CAT6 cable to one of the Control Surface Ports on the MIX-16 or MIX-32. Using various controls on the unit, users can each create their own custom mix, which is then output to headphones, in-ear monitors or stage monitors, directly from the personal mixer or Livemix DA-816 analog output unit.

TROUBLESHOOTING

<p>My CS-DUO is not powering on.</p>	<p>Verify that the standard network cable is connected from a MIX-16/MIX-32 port to the CS PORT on the CS-DUO. The green light on the CS PORT will light up green when power is connected and the yellow light will light when there is a problem receiving information from the MIX-16/MIX-32.</p> <p><i>NOTE: You cannot connect a CS-DUO to the CS Port Thru on a CS-SOLO.</i></p> <p>Verify that your MIX-16/MIX-32 is powered on.</p>
<p>I do not hear any sound coming out of my headphones or stage monitor.</p>	<p>Verify that the master volume knob is turned up and that the Mute Master Output is not selected in the Master Output Settings. Also ensure the volume levels on each channel are appropriate. Ensure that the Volume Limiter is not turned all the way down.</p>
<p>I do not hear any sound from a specific channel in my mix.</p>	<p>Verify that the channel is not muted. If it is muted, you will see a red mute label next to the channel name on the Channel Overview and a red indicator will be visible on the Status Bar.</p> <p>Verify that the channel is connected properly to the AD-24 or mapped properly if using the Dante Option Card. If your mixing console supports direct output muting, verify these that these are on.</p>
<p>I do not hear any sound from my media player connected to the Aux Input.</p>	<p>Go to the Accessory Channels, make sure the volume for the Aux Input source is turned up. In Single Channel View, verify Monitor All Aux is selected.</p>
<p>I am adjusting the panning but everything still sounds mono.</p>	<p>Go to the Master Output Settings and verify that your personal mixer is set to Headphones Stereo and not Balanced Mono.</p>
<p>My personal mix sounds dry and clinical.</p> <p>I don't feel any connection with the other musicians or the audience.</p>	<p>In the Accessory Channels, select the Ambient Mic channel and ROTATE the ADJUST knob to add some ambient sound to your mix.</p> <p>You might also try adding some reverb by pressing the Master Volume knob and selecting Master Reverb.</p>
<p>I can't hear the Ambient Mic or Intercom.</p>	<p>Verify the CS-DUO is not set to Balanced Mono mode. In Balanced Mono mode, the ambient mics and intercom are turned off to reduce feedback. It also keeps the intercom out of the floor wedges.</p>

<p>MIX B doesn't seem to be working.</p>	<p>The CS-DUO might be in the Linked Mode. PRESS and HOLD both Master Volume knobs to exit Linked Mode or power cycle the personal mixer.</p>
<p>There is a clicking, popping or audio dropouts.</p>	<p>Audible clicking and popping is usually an issue with the clock source. If you are using Livemix with a Dante network, verify that your console or Dante device is set to be the Leader and Livemix is set to be the Follower. This can be done through the Dante controller on a Windows PC or Apple computer. NOTE: If you desire to have your console's internal (or local) clock be the clock source, select this configuration setting on your console. Then in Dante Controller, set your console's Dante option card to be the Leader Dante device on the Dante network and select "Sync to External" for this.</p> <p>If audio is dropping out for a few seconds on a Dante input version, and you are using a switch, verify that it is a gigabit switch and that it is not an EEE or "green" ethernet switch.</p>
<p>I don't hear any channels.</p>	<p>Verify you have the correct input device selected. In the Global Configuration menu, select "Input Select and Digital Configuration" then "Input Source Select" and verify that the correct input option is selected.</p> <p>Verify that there are not any cable couplers, hubs, switches or splitters between the personal mixers and MIX-16/MIX-32.</p> <p>Check the network cable connecting the personal mixer to the MIX-16/MIX-32. If it was poorly constructed or there is a break in the cable, you may not be getting the proper data to the personal mixer.</p>

APPENDIX

PRESET EFFECTS LIST

- 1 DRUMS: ROCK KICK
- 2 DRUMS: JAZZ KICK
- 3 DRUMS: ROCK SNARE
- 4 DRUMS: JAZZ SNARE
- 5 DRUMS: TOM LOW
- 6 DRUMS: TOM MID
- 7 DRUMS: TOM HIGH
- 8 DRUMS: OVERHEAD ROCK
- 9 DRUMS: OVERHEAD JAZZ
- 10 DRUMS: HIGH HAT
- 11 BASS: ELECTRIC FINGER
- 12 BASS: ELECTRIC PICK
- 13 BASS: ELECTRIC SLAP
- 14 BASS: UPRIGHT
- 15 GUITAR: ELECTRIC LEAD
- 16 GUITAR: ELECTRIC RHYTHM
- 17 GUITAR: ACOUSTIC
- 18 KEYS: ACOUSTIC PIANO
- 19 KEYS: ELECTRIC PIANO
- 20 KEYS: SYNTH
- 21 HORNS: TRUMPET
- 22 HORNS: TROMBONE
- 23 HORNS: SAX
- 24 STRINGS: VIOLIN
- 25 STRINGS: CELLO
- 26 PERCUSSION: BONGO/CONGA
- 27 VOX: MALE LEAD
- 28 VOX: MALE BACKGROUND
- 29 VOX: FEMALE LEAD
- 30 VOX: FEMALE BACKGROUND
- 31 VOX: MALE SPEECH
- 32 VOX: FEMALE SPEECH

CREATING A PERSONAL MONITOR MIX

1 CHANNEL OVERVIEW

Most of your mixing occurs on the Channel Overview, allowing you to see the names and levels of 12 channels at a time. On the CS-DUO, press the A or B control button to select the A mix (blue) or the B mix (red).



2 VOLUME & PAN

The ADJUST VOL & PAN Knob is for adjusting the volume or pan.

1. **SELECT** a channel to adjust.
2. **ROTATE** the Adjust Knob to increase or decrease volume.



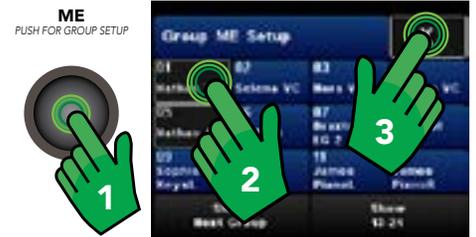
3. **PRESS** the Adjust Knob for pan.
4. **ROTATE** the Adjust Knob to pan left or right. The mixer returns to volume mode after 5 seconds.



3 ME KNOB

The ME Knob allows you to quickly adjust the volume of your own "group". If you are singing and playing guitar, you may want to assign these channels to the ME Knob.

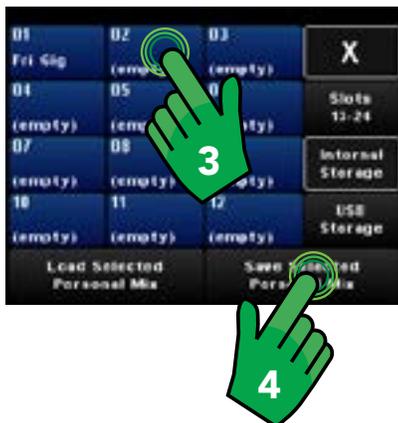
1. **PRESS** the ME Knob to access Group Setup.
2. **SELECT** your channel(s).
3. **PRESS X** to exit.



4 SAVE YOUR MIX

Saving a mix makes for an easy starting point for your next performance.

1. **PRESS** Mix Tools from the Channel Overview.
2. **PRESS** Load/Save Personal Mix.
3. **SELECT** an available save slot.
4. **PRESS** Save Selected Personal Mix.
5. **PRESS** Yes and enter Mix Name.
6. **PRESS** Done.



5 LOAD YOUR MIX

Loading a mix follows the same pattern as Saving a mix.

1. **PRESS** Mix Tools from the Channel Overview.
2. **PRESS** Load/Save Personal Mix.
3. **SELECT** a mix to load.
4. **PRESS** Load Selected Personal Mix.



6 PRESS THE X

The Livemix system has many advanced features. If you find yourself somewhere you don't want to be, **PRESS X** to return the Channel Overview.



MIXING TIPS

- **START AT ZERO** Load mix slot 23 (Zero Mix) as a starting point and set your master volume to 50-80%.
- **ADD TIMING REFERENCE** Mix the channels that keep time, usually percussion instruments. Start with the Kick in the center and add snare and hi-hats panned off center.
- **ADD PITCH REFERENCE** Mix the channels you need to ensure you are on pitch. Limit this to 1-2 channels, like piano or acoustic guitar. Pan them off center to create space.
- **ADD THE LEADER** Mix the lead vocal to hear where the song is going.
- **ADD YOU** Increase your channel volume so you can hear yourself, but don't overpower the mix.
- **ADD THE REST SPARINGLY** You don't need to hear everything on stage. Some instruments are not essential to *your* performance and can be reduced to make space for important channels.
- **REVERB OR AMBIENT MICS** After mixing, choose either Reverb or Ambient Mics to "open up" the mix. For Reverb, press the Master Volume knob, select Master Reverb, select a room type and adjust. For Ambient Mics, adjust level on the Accessory Channel screen. Add slowly to the mix.

You don't need to hear everything! Some instruments are not essential to your performance and can be reduced in the mix making space for the important channels.

LIVEMIX SUPPORT

Phone Support: 952-401-7700
Toll Free: 844-DAL-INFO
Email Support: support@digitalaudio.com
Website: www.digitalaudio.com/support

DIGITAL AUDIO LABS
1266 Park Rd
Chanhasen, MN 55317

TECHNICAL SPECIFICATIONS

CS-DUO SPECIFICATIONS

Output Power & THD+N	@22Ω	200mW @ 1% THD+N
		100mW @ .03% THD +N
	@32Ω	250mW @ 1% THD+N
		100mW @ .014% THD +N
	@64Ω	250mW @ 1% THD+N
		100mW @ .005% THD +N
	@300Ω	130mW @ 1% THD+N
		100mW @ .003% THD +N
Frequency Response	20 Hz - 22 kHz ± 3 dB	
S/N Ratio	103 dB	
Input Impedance (Aux In)	7.5kΩ	
Crosstalk (Left to Right)	-103 dB	
Max Cable Length from MIX-16/MIX-32	100m CAT5e (shielded recommended)	
Filter Q	High Pass and Low Pass	.707
	Peak/Dip	1.5
Filter Cut/Boost Amount	± 6 dB	
Ambient Mic Gain	25 dB	
Dimensions	8.2" (208mm) W	
	6" (152mm) D	
	1.94" (49mm) H	
Weight	1.9 lbs (0.86kg)	

LIVEMIX SYSTEM SPECIFICATIONS

	.03% (100mW, 22 Ω)
THD+N (18 dBu 1kHz input)	.014% (100mW, into 32 Ω)
	.005% (100mW into 64 Ω)
	.003% (100mW into 300 Ω)
S/N Ratio	103 dB
Frequency Response	20Hz-22kHz \pm 3 dB
Crosstalk (Left to Right)	-103 dB
Latency	1.5 mS



© 2014, 2015 Digital Audio Labs. ™ 2017 Digital Audio Labs. © 2023 Digital Audio Labs. Audinate®, the Audinate logo and Dante are trademarks of Audinate Pty Ltd. Livemix is a registered trademark of Digital Audio Labs.
Patents pending.