

LIVEMIX PRO-16 LIVEMIX PRO-32

USER GUIDE V1.0
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DIGITAL AUDIO LABS
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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 un-insulated 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 person, personal possessions, or data due to an improper or missing ground connection.

DIGITAL AUDIO LABS LIMITED WARRANTY

Digital Audio Labs (DAL) 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.

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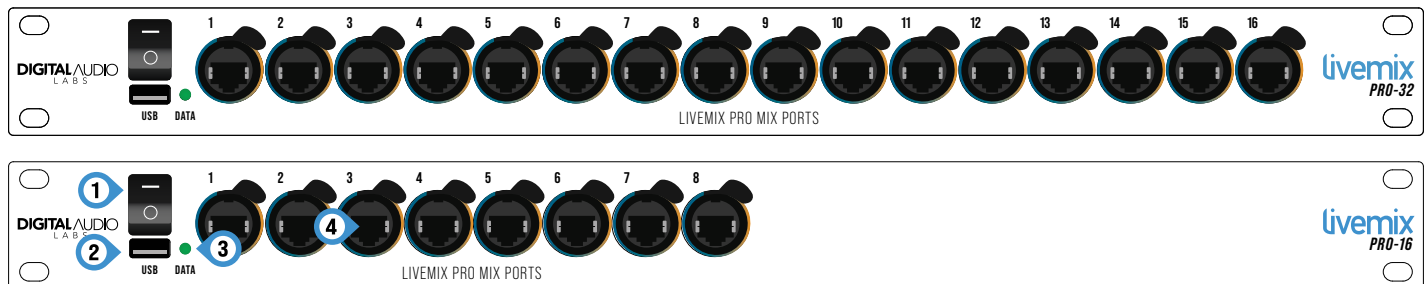
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OVERVIEW

The Livemix Pro-16 and Livemix Pro-32 are the central mix hubs of the Livemix system. The Livemix Pro-16 provides up to 16 stereo mixes and the Livemix Pro-32 provides up to 32 stereo mixes. The Livemix Pro-16/32 also provides power to the connected Personal Mixers.

- 64-channel digital input
- 24-bit digital mixing and processing
- Power and audio distribution to attached personal mixers
- 16 discrete monitor mixes with the Livemix Pro-16
- 32 discrete monitor mixes with the Livemix Pro-32

ANATOMY OF THE PRO-16/32



FRONT PANEL

1. POWER SWITCH

This switch turns power on/off.

2. USB

The USB port connects to a USB Flash Drive for firmware updates.

3. DATA LIGHT

This light will change color to indicate the status of the connection to a Dante network.

- The light will illuminate green when the PRO-16/32 is functioning normally.
- The light will illuminate yellow when there is a clock issue or Dante channels are muted.
- The light will illuminate red when there is a connection error.

4. MIX PORTS

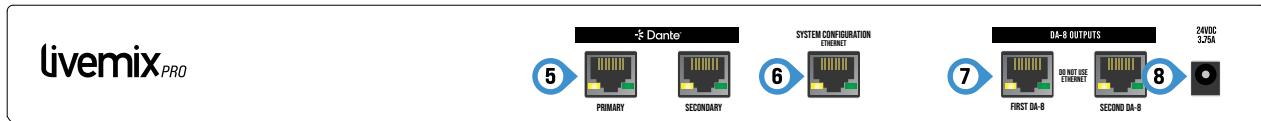
Each port supplies communication data and power to connected Livemix personal mixers through a shielded CAT5e or CAT6 network cable. These cables must be shielded to prevent damage to the devices. The Ethercon connectors will accept either Ethercon or standard cable connections. **NOTE: DO NOT CONNECT THIS PORT TO A STANDARD ETHERNET PORT, HUB, OR SWITCH. IT MAY CAUSE DAMAGE TO THE DEVICE.**

Two indicator lights on each port report device status information.

- The BLUE light illuminates when a personal mixer has a valid connection with the PRO-16/32.
- The YELLOW light is a fault indicator. It may illuminate briefly when each personal mixer is powered on. If it remains lit,

this indicates one of the following problems:

1. The cable to the personal mixer is not functioning correctly
2. The control surface port has an issue
3. The personal mixer is not functioning or communicating properly.
4. If both indicators are flashing, the power to the port has been turned off due to excessive current draw. It will be restored after 60secs. If the issue recurs, unplug the connected personal mixer.



BACK PANEL

5. DANTE NETWORK PORTS

Primary and secondary ports for connection to Dante network.

6. SYSTEM CONFIGURATION

This port is for future use.

7. DA-8 OUTPUT

These ports connect to Livemix DA-8 analog output rack units. If only using one DA-8, connect to the jack labeled FIRST DA-8. Connect the second DA-8 (if using) to the SECOND DA-8 port.

WARNING: DO NOT CONNECT THIS PORT TO A STANDARD ETHERNET PORT, HUB, OR SWITCH. IT MAY CAUSE DAMAGE TO THE DEVICE.

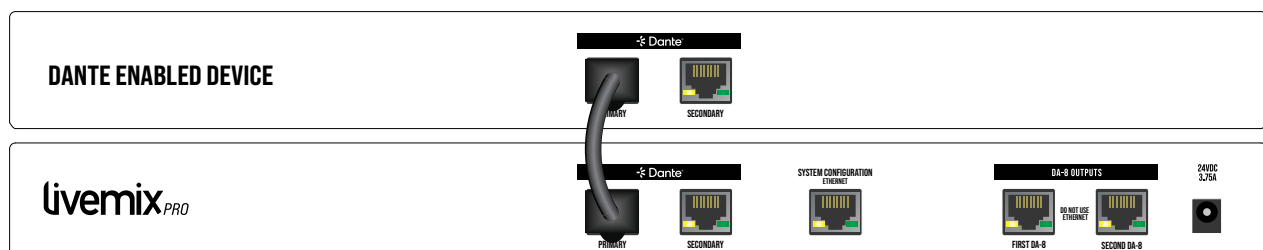
8. POWER JACK

Connect the included power supply here. Only use the power supply that is supplied with your PRO-16/32. The PRO-16/32 is supplied with a 24V / 5A power supply. Contact support for a replacement power supply if necessary.

SETUP DIAGRAMS

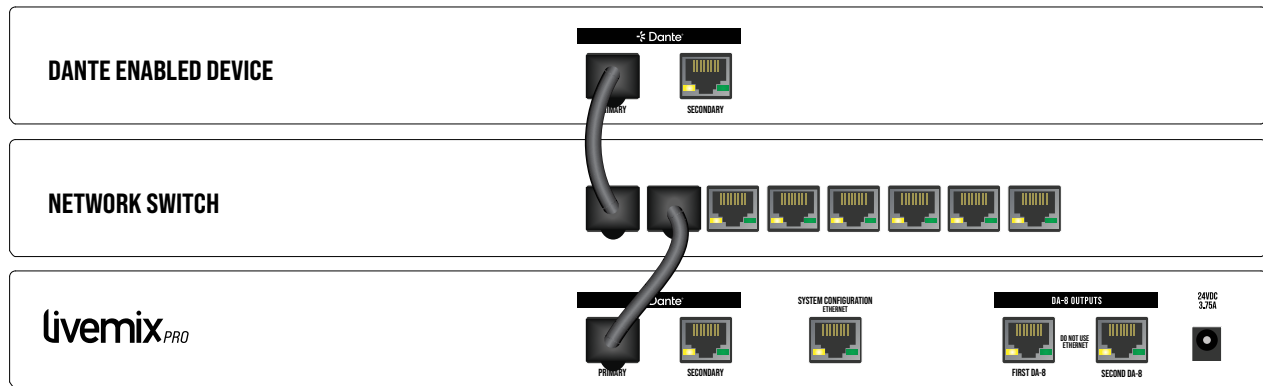
DIGITAL INPUT TO PRO-16/32

To connect the Livemix Pro 16/32 directly to a Dante device, connect a CAT-5e or CAT-6 network cable to the PRIMARY port on both devices.



DIGITAL INPUT TO PRO-16/32 WITH SWITCH

To connect the Livemix Pro 16/32 to a Dante network, connect a CAT-5e or CAT-6 network cable from the PRIMARY Dante port to a network switch with other Dante devices.



PRO-16/32 TO LIVEMIX PRO PERSONAL MIXERS

To connect the Livemix Pro 16/32 to Livemix Pro personal mixers, connect SHIELDED CAT-5e or CAT-6 cable (shielded required) from one of the front panel Livemix Pro Mix Ports to the MIX PORT jack on a Livemix Pro Duo or Livemix Pro Solo. These do not have to be in any particular order or sequence. Planning which Livemix personal mixer goes into which Mix Port may help identify each personal mixer when using the MirrorMix[®] remote mixing feature (see Livemix Pro Duo/Solo manual for more information).

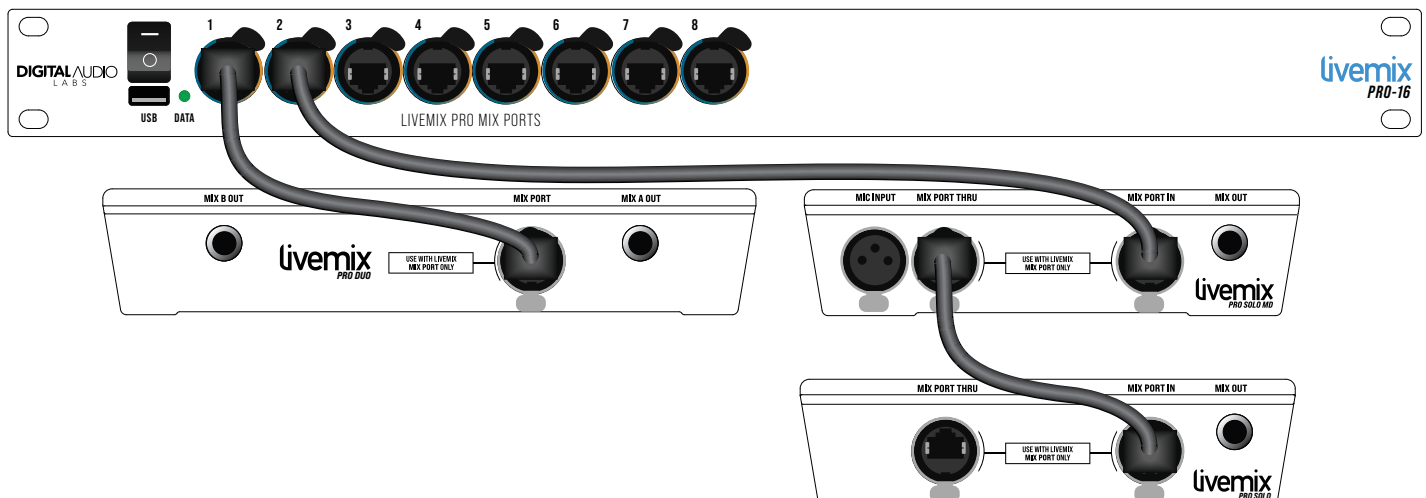
When using the Livemix Pro Solo or Solo MD, connect the first personal mixer to the Livemix Pro Mix Port. A second Pro Solo can be connected with a SHIELDED CAT-5e or CAT-6 from the MIX PORT THRU on the first unit to the MIX PORT on the second unit.

NOTE: Only Two PRO SOLO units can be cascaded.

NOTE: The audio data sent over the Livemix Pro system is a proprietary data format. It will not work with a switch or a standard Ethernet network.

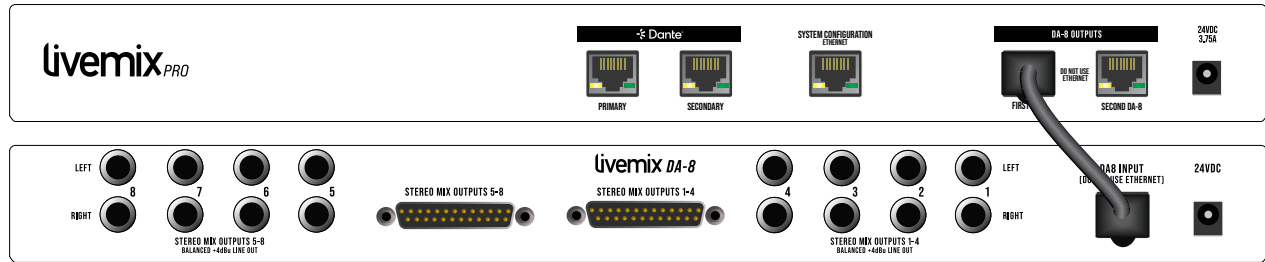
NOTE: If power is interrupted to the PRO-16/32, personal mixes will automatically return to the last loaded mix when it powers back on. Additionally, the PRO-16/32 will automatically return to the last loaded Global Configuration.

WARNING: LIVEMIX PRO IS NOT BACKWARDS COMPATIBLE WITH LIVEMIX. CONNECTING A LIVEMIX CS-DUO OR CS-SOLO TO THE LIVEMIX PRO-16/32 MAY DAMAGE THE DEVIDES. CONNECTING A LIVEMIX MIX-16/32 TO A LIVEMIX PRO DUO, PRO SOLO, OR PRO SOLO MD MAY ALSO DAMAGE THE DEVIDES.



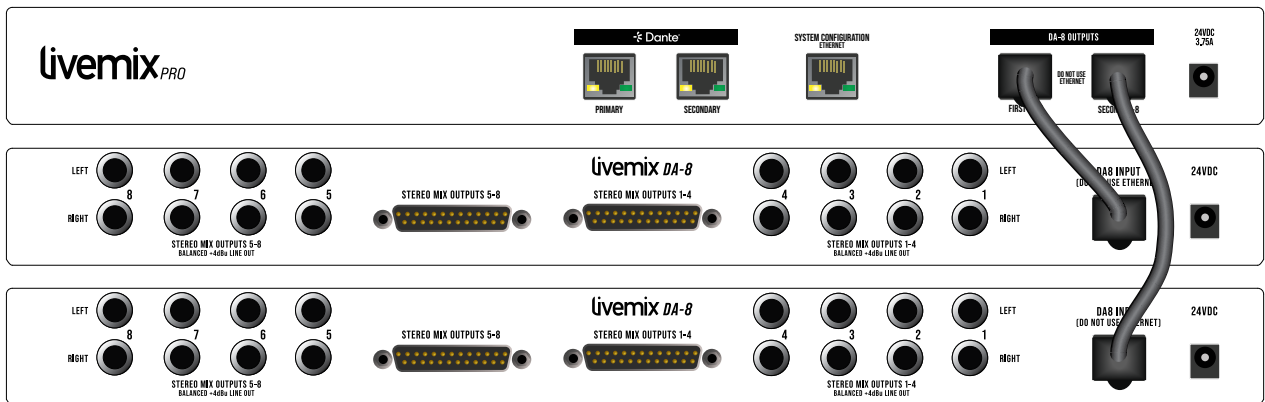
CONNECTING THE DA-8 TO THE PRO-16/32

Connect a Livemix Pro DA-8 analog output unit to the Livemix Pro-16/32 by attaching a SHIELDED CAT-5e or CAT6 cable from the port labeled FIRST DA-8 on the PRO-16/32 to the DA8 INPUT on the back of the Pro DA-8.



CONNECTING TWO DA-8'S TO THE PRO-16/32

When connecting two Livemix Pro DA-8 analog output units to the Livemix Pro-16/32, attach a SHIELDED CAT-5e or CAT6 cable from the port labeled FIRST DA-8 on the PRO-16/32 to the DA8 INPUT on the back of the first Pro DA-8. Connect a second SHIELDED CAT-5e or CAT6 cable from the port labeled SECOND DA-8 on the PRO-16/32 to the DA8 INPUT on the back of the second Pro DA-8 unit.



SETUP AND OPERATION

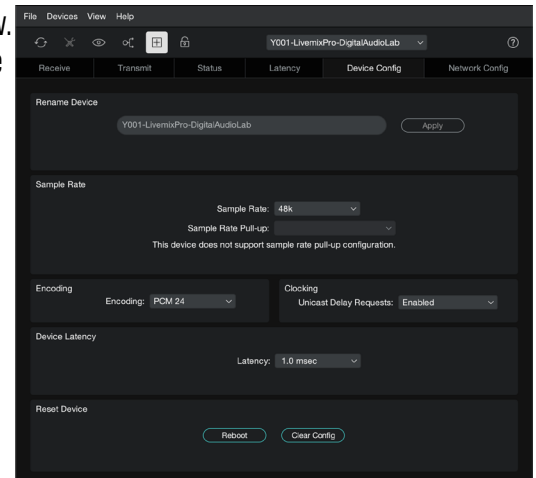
Set up for the Livemix Pro system is performed in two locations, Dante Controller and a connected Livemix Pro personal mixer.

SETTING SAMPLE RATE WITH DANTE CONTROLLER

Set the sample rate of the Livemix Pro system with Dante Controller.

Figure 1

1. Using the Devices menu in the Dante Controller menu bar, select Device View.
2. Select the Livemix Pro-16 or Livemix Pro-32 from the drop down menu in the top bar where it says (Select a Dante Device)...
3. Select the Device Config tab
4. Change the sample rate in the Sample Rate section. Select a sample rate that matches other devices in the system (Figure 1).
5. Press Reboot. The Livemix Pro system will reboot and be unavailable for 30-60 seconds.



ROUTING AUDIO WITH DANTE CONTROLLER

Use Dante Controller to route audio to the Livemix Pro system. To route audio from a Transmitting device like a mixer or digital snake, use the Routing window in Dante Controller.

1. In the Routing window in Dante Controller, expand the Transmitting device along the top horizontal row by pressing the [+] next to the device you will route from.
2. Expand the Livemix Pro-16/32 in the vertical Receivers column by pressing the [+] next to the device name.
3. To assign a receiving channel to a transmitting channel, hover over the grid space where the Transmitting device channel and the Receiving device channel intersect (Figure 2). Click to assign.
4. Repeat for each desired pairing.

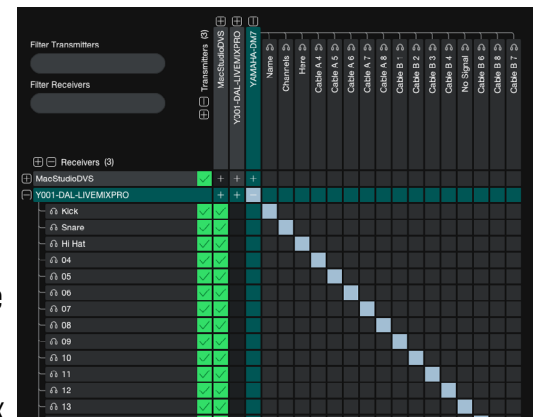
Figure 2

To quickly assign subsequent channels, hover over the [-] between the Transmitting and Receiving devices. Press CONTROL while clicking to assign multiple subsequent channels at once.

USING LIVEMIX PRO WITH YAMAHA MIXERS

For users of the Yamaha DM or Rivage series of mixers, audio can be routed to Livemix Pro directly on the mixer with the Device Mount function. Using Dante Controller, change the name of the Livemix Pro-16/32 from the factory set name to **Y001-DAL-LIVEMIXPRO** so it can be identified by the mixer.

If adding multiple Livemix Pro 16/32 units, each should have a subsequent prefix. For example, the second PRO-16/32 should be named **Y002-DAL-LIVEMIXPRO**.



1. Using the Devices menu in the Dante Controller menu bar, select Device View.
2. Select the Livemix Pro-16 or Livemix Pro-32 from the drop down menu in the top bar where it says (Select a Dante Device)...
3. Select the Device Config tab
4. In the Rename Device section, change the name to **Y001-DAL-LIVEMIXPRO** for the first Livemix Pro-16/32. Additional units should have ascending numbers in the Y00X prefix. Unit two would be Y002. The third unit would be Y003, etc.
5. Press Apply

PUBLISHING PERSONAL MIXES TO DANTE

Livemix Pro automatically makes personal mixes available to the Dante Network. For example, Port 1A will publish the Left side of the stereo mix to Dante channel 1 and the Right side to channel 2. Port 1B will be on Dante channels 3 and 4.

Use Dante Controller to route personal mixes to external devices.

Additionally, the Intercom and Aux Inputs can be published to Dante. This is helpful when using multiple Livemix Pro-16/32 units in a single installation. The Intercom and/or Aux Inputs can be published from one Livemix Pro-16/32 and then subscribed on another Livemix Pro-16/32 effectively bridging multiple systems.

For information on publishing the Accessory Channels, please see the Livemix Pro DUO/SOLO user guide.

LIVEMIX PRO-16/32 FIRMWARE UPDATES

PRO-16/32 FIRMWARE UPDATE INSTRUCTIONS

The PRO-16/32 can be updated using a connected Livemix Pro Duo or Livemix Pro Solo.

TO UPDATE THE FIRMWARE OF A PRO-16/32 WITH A LIVEMIX PERSONAL MIXER:

1. Download the latest firmware from <http://www.digitalaudio.com/support>.
2. Unzip the firmware zip file and copy the LMUPDATE folder to the root directory of a FAT32 formatted USB flash drive. Please make sure the LMUPDATE folder is not inside another folder and is in the “root” of the USB flash drive.
3. Insert the USB Flash Drive into the front panel USB port on the PRO-16/32.
4. Go to the Livemix Version Info screen by pressing MIX TOOLS > SETTINGS (GEAR) > UTILITIES > VERSION INFO.
5. Press the UPDATE PRO-16/32 button.
6. On the confirmation screen, Press YES to begin the update. If you do not want to update, press NO.
7. Confirm that the USB Flash Drive is inserted when prompted.

CHANNEL (USB)		LIVEMIX VERSION INFO	BACK
		View and update firmware versions	
PRO DUO VERSION		BOOTLOADER 0.80 FIRMWARE 0.82	UPDATE PRO DUO/ PRO SOLO
PRO 16/32 VERSION		BOOTLOADER 0.80 FIRMWARE 0.81	UPDATE PRO 16/32
DA-8 #1 VERSION			UPDATE DA-8
DA-8 #2 VERSION			

TO UPDATE THE FIRMWARE OF THE DANTE NETWORK CARD (INTERNAL) WITH A LIVEMIX PERSONAL MIXER:

1. Download the latest firmware from <http://www.digitalaudio.com/support>.
2. Unzip the firmware zip file and copy the LMUPDATE folder to the root directory of a FAT32 formatted USB flash drive. Please make sure the LMUPDATE folder is not inside another folder and is in the “root” of the USB flash drive.
3. Insert the USB Flash Drive into the front panel USB port on the PRO-16/32.
4. Go to the Livemix Version Info screen by pressing MIX TOOLS > SETTINGS (GEAR) > UTILITIES > VERSION INFO.
5. Press the UPDATE DANTE button.
6. On the confirmation screen, Press YES to begin the update. If you do not want to update, press NO.
7. Confirm that the USB Flash Drive is inserted when prompted.

NOTE: To find Dante Network IP information, LONG PRESS on the Dante Firmware or Software cells on the LIVEMIX VERSION INFO screen.

TROUBLESHOOTING

The Livemix Pro-16/32 is not powering on correctly.	Verify that you have connected the external power supply to a working power outlet.
	Verify that the front panel power switch is set to ON.
My Livemix CS-DUO or CS-SOLO is not working with the Livemix Pro-16/32.	Livemix Pro is not backwards compatible with older Livemix units and could cause damage to incompatible units. Ensure the personal mixers are Livemix Pro Duo, Livemix Pro Solo, or Livemix Pro Solo MD units.
I am not seeing the “Livemix Data” light illuminate.	If the Livemix Data light is not illuminating, there is a problem with the power to the PRO-16/32. Ensure the power supply is connected to the PRO-16/32 and that all the cables are secure. Also verify that the power supply is plugged into an appropriate power source and that the power cable from the source to the power supply transformer is securely attached.
There is a clicking or popping sound in my mix.	Audible clicking and popping is usually an issue with the clock source. Make sure that your console or Dante device is set to be the clock Leader and Livemix Pro is set to be the Follower. This can be done through Dante Controller software on a Windows PC or Apple computer. NOTE: If you desire to have your console’s internal 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”.

SYSTEM SPECIFICATIONS

LIVEMIX PRO-16/32

Max Cable Length to PRO DUO/SOLO	100m CAT5e cable [shielded required]
Max Cable Length to DA-8	100m CAT5e cable [shielded required]
Bit Rate	24-Bit Digital Mixing and Processing
Sample Rate	48 kHz, 96 kHz
Dimensions	19" [483mm] W 10.25" [260mm] D 1U, 1.75" [44mm] H
Weight	6.72 lbs [3.05kg]

WHOLE SYSTEM

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

LIVEMIX SUPPORT

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

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