



DA-816 USER GUIDE

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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 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 persons, personal possessions, or data due to an improper or missing ground connection.

CONTENTS

SAFETY INSTRUCTIONS	ii
IMPORTANT SAFETY INSTRUCTIONS.....	ii
CARE.....	ii
DIGITAL AUDIO LABS LIMITED WARRANTY	1
REPAIR POLICY	1
WARRANTY SERVICE	1
CONTENTS OF BOX	2
INTRODUCTION	2
ANATOMY OF THE DA-816.....	3
SETUP DIAGRAMS.....	4
CONNECTING THE DA-816 TO THE MIX-16 AND MIX-32	4
CONNECTING TWO DA-816 UNITS TO THE MIX-32	4
SETUP DIAGRAMS.....	5
CONNECTING THE DA-816 TO EXTERNAL DEVICES.....	5
SETUP AND OPERATION.....	6
CONNECTING A SINGLE DA-816 TO A MIX-16/32	6
CONNECTING TWO DA-816 UNITS TO A MIX-32	6
CONNECTING THE TRS OUTPUTS TO AN EXTERNAL DEVICE	6
ASSIGNING A MIX WITH THE CS-DUO.....	7
LIVEMIX SUPPORT	9
TECHNICAL SPECIFICATIONS.....	9

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 \$50 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 OF BOX

- DA-816 Rack Unit
- External 12VDC Power Supply

INTRODUCTION

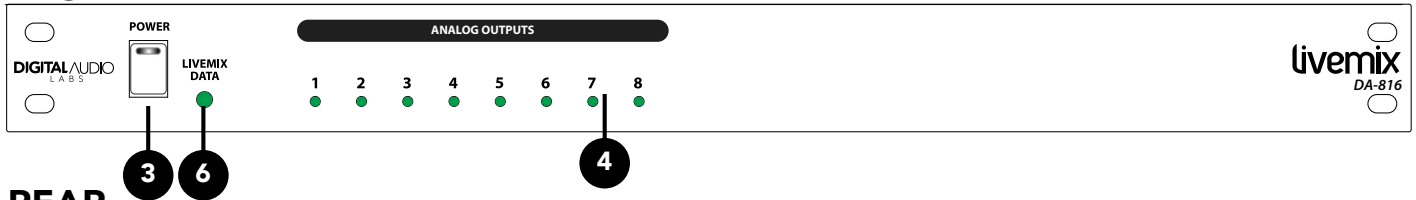
The CS-DUO provides either stereo or mono output directly on the personal mixer. It is often desirable to have stereo outputs from a rack unit feed wireless in-ear systems or other external devices. The DA-816 output box connects to the MIX-16/32 in the rack to provide 8 stereo outputs via TRS connections that can be assigned from any mix in the system. Once your hardware is setup, all mix assignments are made with the CS-DUO touchscreen. This removes tricky physical routing and makes it easy to re-assign mixes when necessary.

Front panel LEDs on the DA-816 indicate a CS-DUO mix is assigned to one of the outputs and can also be used for identification and troubleshooting purposes.

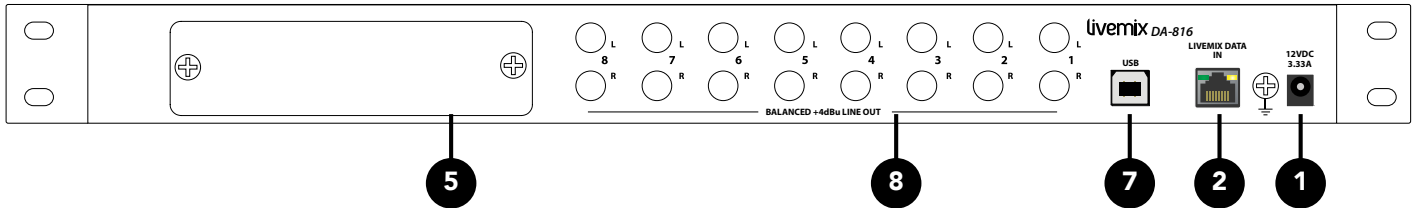
- 16 balanced TRS outputs in stereo pairs
- Easy setup from CS-DUO personal mixer
- Front panel LED indicators
- Option card slot
- High quality audio conversion
- USB connector for firmware updates
- External 12VDC power supply

ANATOMY OF THE DA-816

FRONT



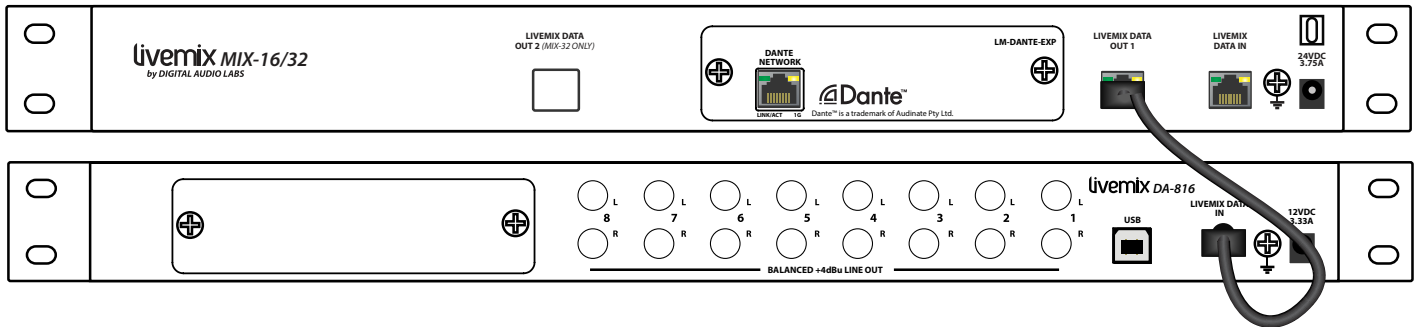
REAR



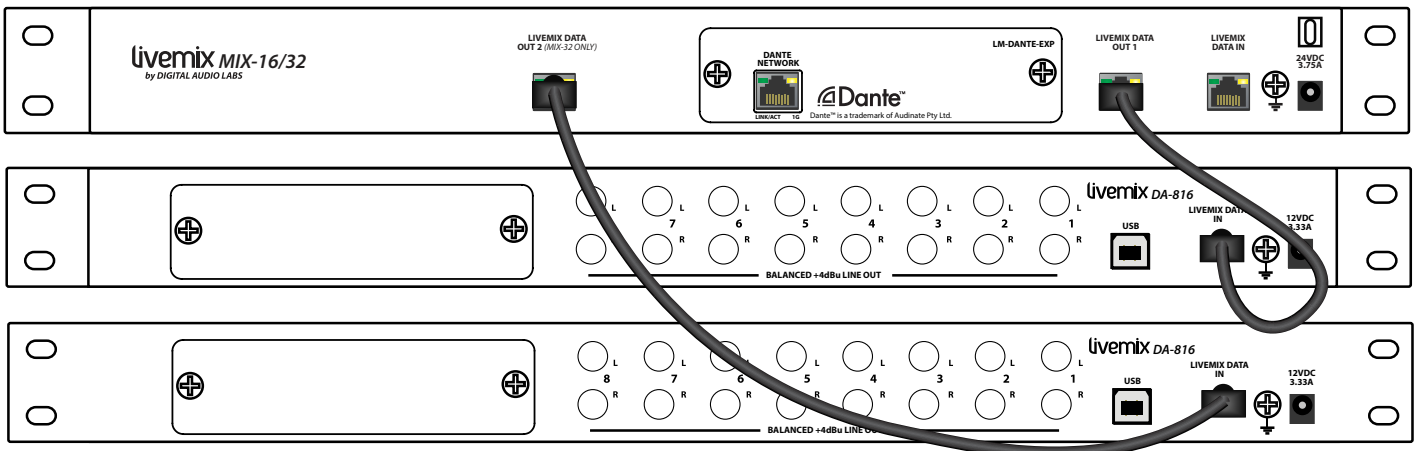
1. **External Power Supply Connector:** Connect the included external power supply to this jack. Make sure to only use the power supply that is supplied with your DA-816.
2. **Livemix Data In:** Connects to a Livemix Data Out port on a MIX-16 or MIX-32.
3. **Power Switch:** This switch turns on the power to the DA-816.
4. **1-8 LEDs:** These lights give you a visual indication that a CS-DUO mix is assigned to one of the stereo outputs. A green light indicates a mix is assigned. These LEDs can also be used for identification and troubleshooting purposes.
5. **Option Card Bay:** This bay is used to provide access to additional input/output formats.
6. **Livemix Data LED:** This light will illuminate green when the DA-816 has a valid connection and is receiving data from a MIX-16/32. If this light is red, it is an indication that the connection to the MIX-16/32 is not functioning properly.
7. **USB Port:** The USB port allows the firmware of the DA-816 to be updated through connection to a Windows PC.
8. **TRS Outputs:** 16 balanced TRS connections in eight stereo pairs for connecting to external devices like wireless in-ear transmitters, powered monitors, snakes, etc.

SETUP DIAGRAMS

CONNECTING THE DA-816 TO THE MIX-16 AND MIX-32



CONNECTING TWO DA-816 UNITS TO THE MIX-32

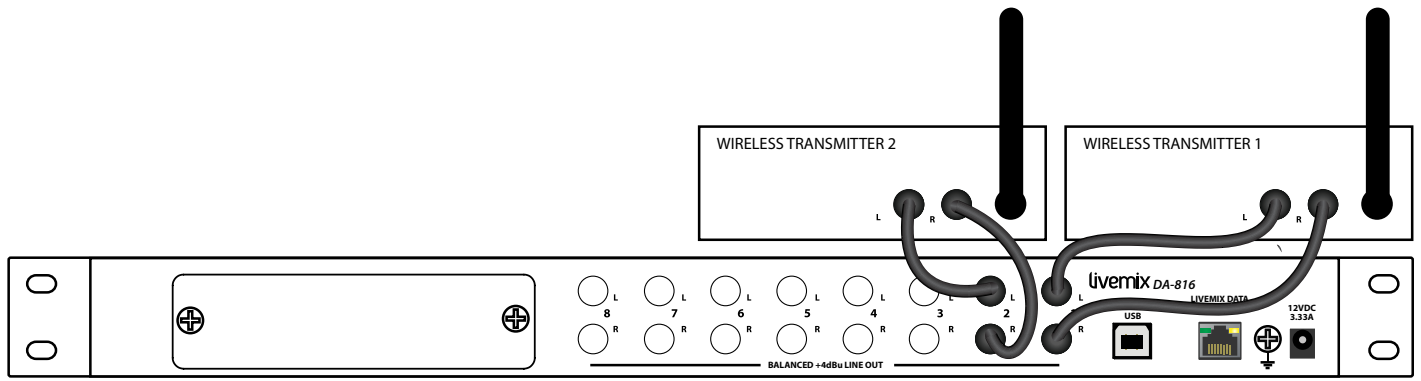


NOTE:

The DA-816 is designed to receive audio from the MIX-16 or MIX-32. Direct connection from a Livemix AD-24 (analog input box) to a DA-816 is not supported.

SETUP DIAGRAMS

CONNECTING THE DA-816 TO EXTERNAL DEVICES



SETUP AND OPERATION

The DA-816 output box allows users to send their personal mixes to wireless in-ear transmitters, powered monitors, or powered house speakers. The DA-816 connects to the MIX-16/32 via a shielded CAT5/CAT6 network cable. Each DA-816 provides eight stereo outputs. Any CS-DUO personal mix can be assigned to one or more of these eight stereo outputs.

CONNECTING A SINGLE DA-816 TO A MIX-16/32

1. Attach the 12VDC external power supply to the DA-816 external power supply connector.
2. Insert a shielded CAT5/CAT6 network cable into the LIVEMIX DATA OUT 1 on the MIX-16/32.
3. Connect the other end of the network cable to the LIVEMIX DATA IN port on the DA-816.

NOTE:

If you are using a MIX-32 and a single DA-816, it **MUST** be connected to LIVEMIX DATA OUT 1. Connecting to LIVEMIX DATA OUT 2 will not function properly.

CONNECTING TWO DA-816 UNITS TO A MIX-32

For installations that require more than 8 stereo outputs, use the MIX-32 with two DA-816 units for up to 16 stereo outputs.

1. Attach the 12VDC external power supply to the DA-816 external power supply connector.
2. Connect the first DA-816 as described above.
3. Insert a second shielded CAT5/CAT6 network cable into the LIVEMIX DATA OUT 2 on the MIX-32.
4. Connect the other end of the network cable to the LIVEMIX DATA IN port on the *second* DA-816.

NOTE:

When using two DA-816s with the MIX-32, you can assign any of the available CS-DUO mixes to any of the DA-816 output ports. All of the available mixes will be available on both the LIVEMIX DATA OUT ports.

CONNECTING THE TRS OUTPUTS TO AN EXTERNAL DEVICE

The DA-816 analog outputs can send any CS-DUO mix to any external balanced analog input. Most often this will be a wireless in-ear monitor system. The DA-816 outputs are labeled 1-8 corresponding to the 8 outputs on the CS-DUO Mix Assign page (see below).

1. The TRS connectors on the back of the DA-816 are labeled to correspond with the assignable outputs. Connect balanced TRS cables from the desired output to the external device.
2. Use the CS-DUO to assign mixes to the outputs.

NOTE:

For external devices that only have mono inputs, change the CS-DUO to **BALANCED MONO** mode after assigning the mixes. This will send the same mono signal out of both TRS jacks for the assigned output.

ASSIGNING A MIX WITH THE CS-DUO

Any Control Surface Port on the MIX-16/32 can be assigned to one of the DA-816 outputs. The assignments can be made or changed easily with the CS-DUO personal mixer. Assignments will be saved with the Global Template.

A CS-DUO must be physically plugged into a MIX-16/32 port to send audio to an external device. If a mix that is assigned to a DA-816 output is physically disconnected or not present that output will not send audio.

TO ENTER THE DA-816 SETUP ON THE CS-DUO

1. PRESS the Mix Tools button on the Channel Overview screen
2. PRESS the Global Setup button
3. PRESS the DA-816 Mix Assign button

ASSIGNING A MIX TO A DA-816 OUTPUT

The 8 purple slots represent the available outputs. When a mix is assigned to one or more of the outputs, the Control Surface Port and mix name (if available) will be visible in the slot.

1. From the Select DA-816 Output screen, select an output you wish to assign (*image 1*).
2. The screen will change to display the MIX-16/32 Control Surface ports (*image 2*). Each slot is labeled with the loaded mix name (1) and control surface port identification (2). If a mix isn't loaded, the mix name section will be blank (3). *It is possible to assign Control Surface Ports even if CS-DUOs are not connected. Please note that audio will not be present on that output.*

You do not need to have a mix loaded to assign that mix to a DA-816 output, but it is a good idea to name/save the mixes for easier identification.

3. To assign the A side (blue) mix of the unit connected to Port 2, PRESS 2A.
4. You will now see the assignment in the DA-816 Output screen.

If you are using two DA-816's, you will be able to select the outputs on the first or second DA-816. The selected DA-816 will have a white border (*image 3*).

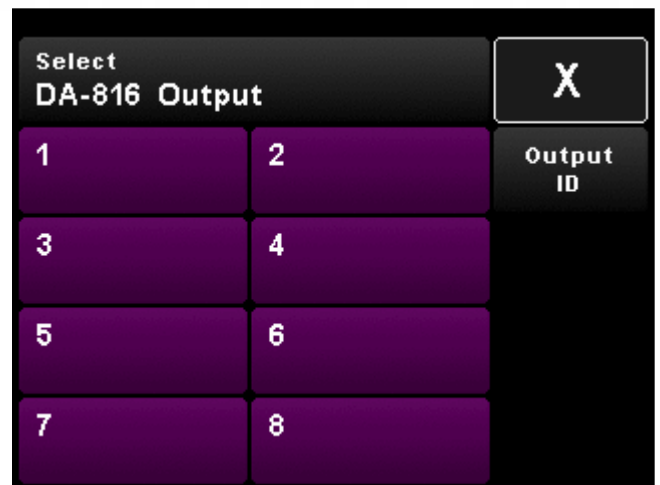


image 1

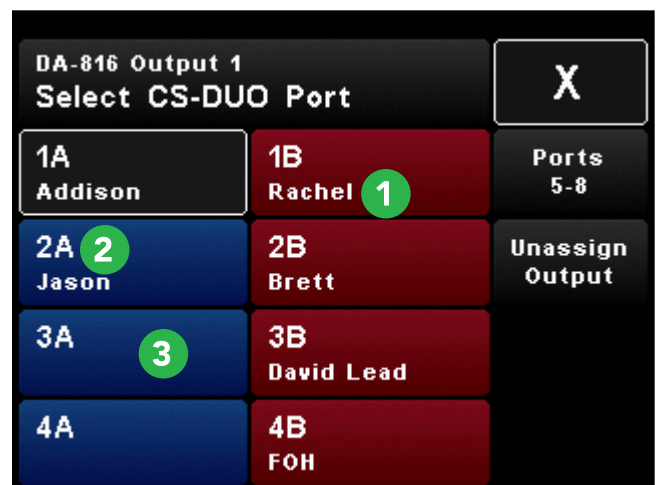


image 2

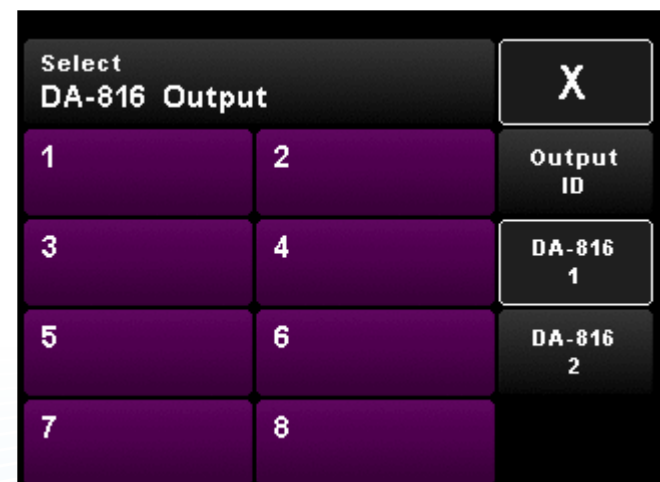


image 3

UNASSIGN AN OUTPUT

To unassign a previously assigned output, simply:

1. Select the DA-816 Output from the DA-816 Output screen.
2. PRESS the Unassign Output button.
3. The Output is now unassigned.

USING THE 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.

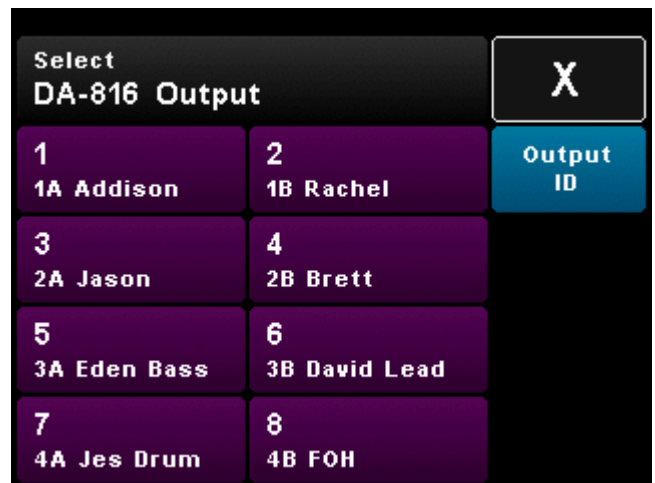
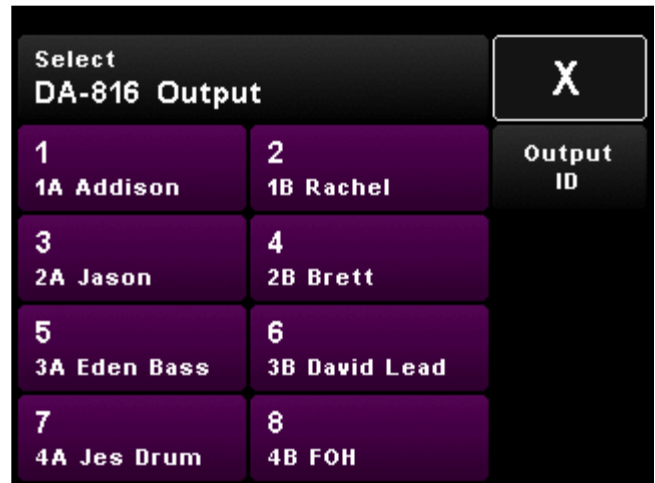
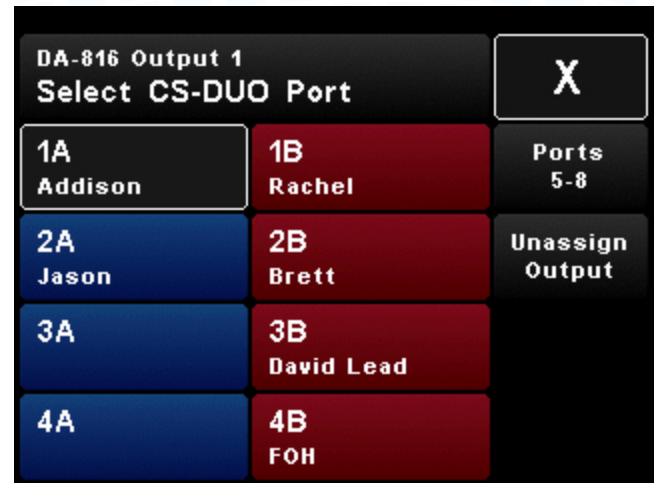
1. PRESS the Output ID button. The Output ID button will flash.
2. Select one or more Output Slots. When selected, the slot will turn gray with a white border.
3. When an Output Slot is selected, the corresponding LED on the front of the DA-816 will flash and a test tone will sound.
4. PRESS the Output ID button again to exit this mode. The Output ID button will stop flashing.

NOTE:

Observe the VU meters on the connected wireless transmitters or devices. The DA-816 sends audible 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 bodypacks and are assigned to the correct CS-DUO's on stage.
- Test which device is connected to the DA-816 outputs.
- Verify proper connection from DA-816 to external devices.



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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TECHNICAL SPECIFICATIONS

DA-816 SPECIFICATIONS

THD+N	.0019%
S/N Ratio	104 dB
Full Scale Output	+4dBu / 19dB peak
Output Impedance	300Ω
Max cable length from MIX-16/32	100 Feet

LIVEMIX SYSTEM SPECIFICATIONS

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



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