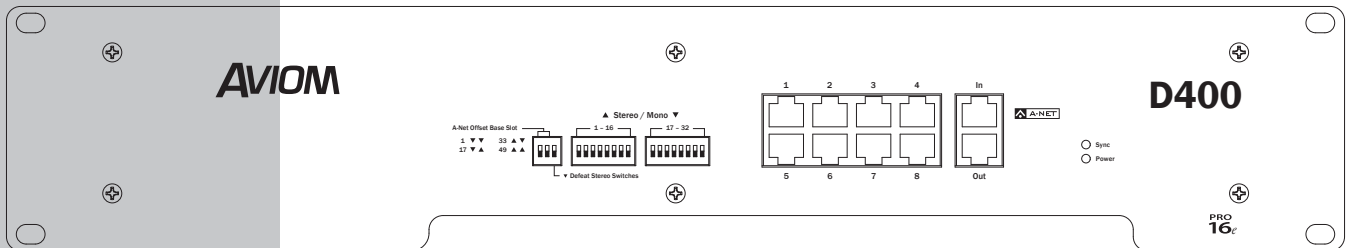
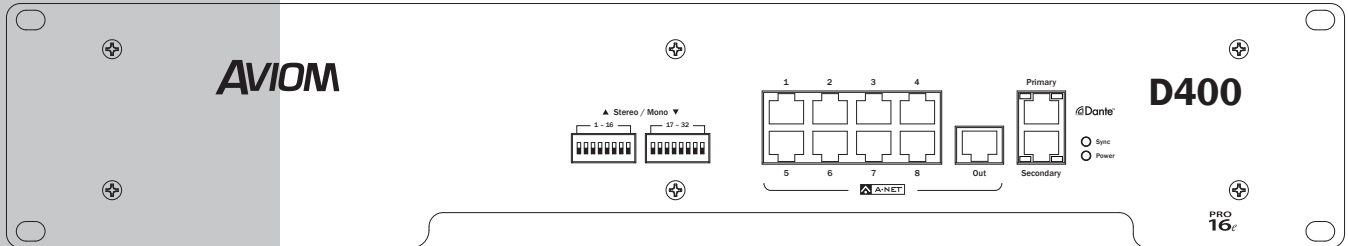


# AVIOM®



# D400-Dante

# D400


A-Net Distributor

## User Guide

## READ THIS FIRST

### Important Safety Instructions

---

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
-  12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. The apparatus shall be connected to a Mains power outlet with a protective grounding/earthing connection.
16. Where the Mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.



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



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous" voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to humans.



## WARNING!



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

NO USER SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

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

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

Replace fuse with same type and rating.

Operating Temperature: 0°C to 40°C (32°F to 104°F)

---

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

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

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

---

### IMPORTANT:

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

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

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

### CAUTION:

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

## Certifications

---

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

**Safety:** UL 62368-1 Ed 2.0  
Testing done to UL 62368-1 first edition  
Can/CSA C22.2 62368-1

ETL/cETL Listed and RoHS Compliant



---

✓ **NOTE:** For connections to Personal Mixers shielded Cat-5e (or better) cable must be used to stay below the CISPR 22 Class B, ICES-003, and FCC 47 CFR Part 15 Class B emissions limits. Unshielded Cat-5e cable may be used on all other connections.

---

## Notice of Rights

All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means—electronic, mechanical, photocopy, recording, or otherwise—without written permission of Aviom, Inc.

## Trademarks

Aviom, A-Net, the A-Net icon, Pro16, Pro16e, Pro64, Virtual Data Cables, m-control, One-Touch Ambience, Dual Profile Channel, Network Mix Back, and AllFrame are trademarks of Aviom, Inc.

Audinate®, the Audinate logo and Dante are trademarks of Audinate Pty Ltd. Audinate products are protected by one or more of US Patents 7747725, 8005939, 7978696, 8171152, and other patents pending or issued. See [www.audinate.com/patents](http://www.audinate.com/patents).

Apple, the Apple logo, and iPhone are registered trademarks of Apple Inc.

All other trademarks are the property of their respective owners.

©2015 Aviom, Inc. All rights reserved. Information is subject to change without notice.

## Aviom, Inc. Limited Warranty

---

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

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

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

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

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

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

## Warranty Information

---

Please record the following information for future reference:

Your Authorized Aviom Dealer:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_

Serial Numbers of Your Aviom Products: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date of Purchase: \_\_\_\_\_

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

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

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

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

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

---

# Table of Contents

Important Safety Instructions . . . . .	ii
Certifications. . . . .	iv
Aviom, Inc. Limited Warranty. . . . .	v
Warranty Information . . . . .	vi
<b>D400 and D400-Dante . . . . .</b>	<b>1</b>
<b>Conventions Used in this Document . . . . .</b>	<b>2</b>
Using Personal Mixers . . . . .	2
Cat-5 Cables . . . . .	2
A-Net Distributors . . . . .	2
Button Presses . . . . .	2
Slots . . . . .	2
<b>Package Contents . . . . .</b>	<b>3</b>
<b>About A-Net . . . . .</b>	<b>3</b>
<b>Compatibility . . . . .</b>	<b>4</b>
Pro16 Products . . . . .	4
<b>About Category 5 . . . . .</b>	<b>5</b>
Cat-5 Cables . . . . .	5
Cable Lengths . . . . .	6
<b>AC Line Conditioning . . . . .</b>	<b>7</b>
<b>Cleaning and Maintenance Information . . . . .</b>	<b>7</b>
<b>D400 A-Net Distributor . . . . .</b>	<b>8</b>
<b>Overview. . . . .</b>	<b>8</b>
A-Net In, D400 . . . . .	11
Dante Connections, D400-Dante . . . . .	11
Dante Primary Port . . . . .	11
Dante Secondary Port . . . . .	12
A-Net Ports 1 to 8 . . . . .	12

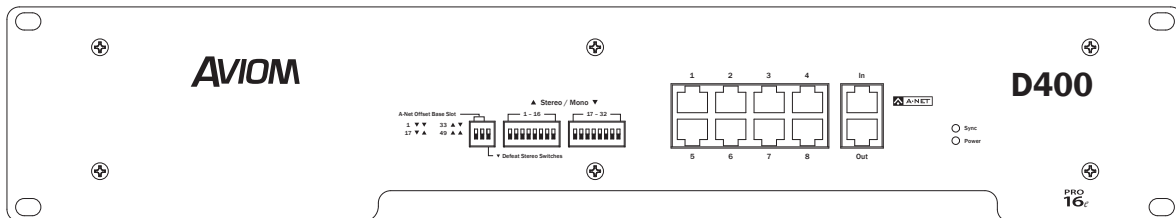
<b>A-Net Out</b> . . . . .	13
<b>Stereo Link DIP Switches</b> . . . . .	14
DIP Switch Block 1 . . . . .	15
DIP Switch Block 2 . . . . .	15
<b>A-Net Offset Base Slot</b> . . . . .	16
Channel Mapping . . . . .	17
Stereo Channels . . . . .	19
<b>Sync LED</b> . . . . .	20
<b>Power LED</b> . . . . .	20
<b>Power Supply</b> . . . . .	21
<b>Fuse</b> . . . . .	22
<b>Dante Setup</b> . . . . .	23
<b>Routing Channels</b> . . . . .	23
<b>Clock Status</b> . . . . .	24
<b>Device View</b> . . . . .	25
Status Tab . . . . .	26
Device Config Tab . . . . .	27
Network Config Tab . . . . .	28
<b>Personal Mixing Systems</b> . . . . .	29
<b>Connecting Personal Mixers</b> . . . . .	29
<b>16-Channel Personal Mixing Systems</b> . . . . .	30
About A-Net Offset Base Slot . . . . .	31
Stereo Links . . . . .	31
<b>Using Multiple A-Net Distributors</b> . . . . .	35
<b>Using the D400 With the D800 and A-16D Pro</b> . . . . .	36
<b>D400 and D400-Dante A-Net Distributor Specifications</b> . . . . .	37
Common Specifications . . . . .	37
D400 A-Net Distributor Specifications . . . . .	38
D400-Dante A-Net Distributor Specifications . . . . .	38
<b>Dimensions</b> . . . . .	39
<b>Cat-5 Cable Pinout</b> . . . . .	40
T568A . . . . .	40
T568B . . . . .	40
<b>Index</b> . . . . .	41
<b>Warranty Registration</b> . . . . .	44



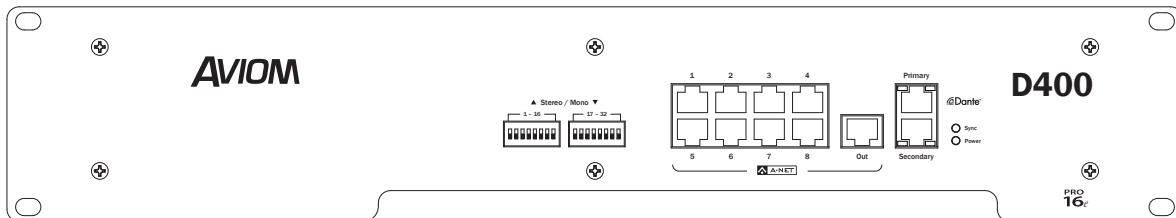
# D400 and D400-Dante

Thank you for purchasing the Aviom **D400** and/or **D400-Dante A-Net Distributor**. This User Guide is designed to familiarize you with your new product's features and to have your personal mixing system up and running as quickly as possible.

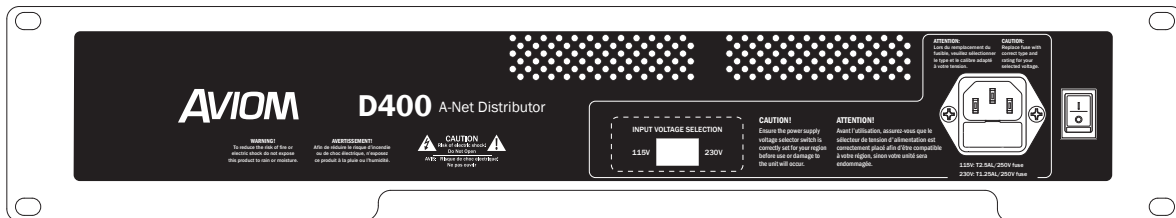
Two versions of the D400 are available: the standard D400 includes a Pro16e® A-Net® input, compatible with all Pro16® Series and Pro16e-capable devices; the D400-Dante offers Dante™ Primary and Secondary inputs for connectivity to a Dante™ digital audio network.



The front panel of the D400



The front panel of the D400-Dante



The rear panel of the D400 and D400-Dante are identical.

# Conventions Used in this Document

---

## Using Personal Mixers

When referring to the use of the Personal Mixers in a personal mixing system in general, the term **Personal Mixer** is used to describe a case where an A640, A360, A320, or A-16II Personal Mixer can be used.

## Cat-5 Cables

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

## A-Net Distributors

The D800, D800-Dante, D400, D400-Dante, as well as the legacy A-16D, and A-16D Pro A-Net Distributors are referred to generically as **A-Net Distributors**. All are used to copy an A-Net digital signal and split it into multiple copies so that devices may be connected in parallel. In a case where either the D400 or D400-Dante version of the product may be used, the text will reference the **D400**. In a case where either the D800 or D800-Dante version of the product may be used, the text will reference the **D800**.

## Button Presses

When instructed to press a specific button, move a switch, or when referring to a specific port, jack, etc., on a product, a special font style is used. For example, "Connect a Cat-5 cable to the **A-Net In** port."

## Slots

Audio channels from analog input devices or digital console cards connected to the network are referred to as **slots**. There are a total of 64 slots in an A-Net network.

## Package Contents

---

The D400 (or D400-Dante) A-Net Distributor box includes:

- One A-Net Distributor
- IEC power cable

Documentation for the D400 is on the Aviom website, [www.Aviom.com](http://www.Aviom.com).

Options for your personal mixing system include:

- Cat-5e/Cat-6 interconnect cables
- D800, D800-Dante, D400, or D400-Dante A-Net Distributors
- A640, A360, A320, or A-16II Personal Mixers
- Dante Controller software, available free from the Audinate website

A Warranty Registration can be found within this User Guide. Be sure to fill out the form and return it to Aviom, Inc. via mail or fax as soon as possible.

## About A-Net

---

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



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

Some of the benefits of using A-Net to transmit digital audio are:

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

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

Pro16e A-Net data is intended for use with the A640, A360 and A320 Personal Mixers which can take advantage of the higher network channel count that Pro16e provides.

## Compatibility

---

The D400 and D400-Dante A-Net Distributors are compatible with Pro16 and Pro16e A-Net devices as detailed below.

## Pro16 Products

---

The **A-Net Out** from the following Pro16 devices may be connected to the D400's **A-Net In** port:

- AN-16/i v.2 Input Module
- D800 or D800-Dante A-Net Distributors
- Third-Party Pro16 A-Net digital console cards
- Aviom16/o-Y1 A-Net Card for Yamaha® devices
- AN-16/o v.4 Output Module
- AN-16/i-M Mic Input Module
- AV-M8 Mic Input Module
- AV-P2 Output Module

*Legacy Products:*

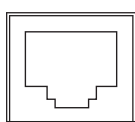
- AN-16/i Input Module
- A-16II Personal Mixer
- A-16R Rack-mount Personal Mixer
- A-16D and A-16D Pro A-Net Distributors

## About Category 5

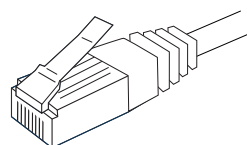
---

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

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



RJ45 Jack



Cat-5e Cable

## Cat-5 Cables

---

Although the D400 (or D400-Dante) A-Net Distributor's eight front panel **A-Net Out** ports will operate properly with unshielded Cat-5e cable, when connecting these outputs to Personal Mixers shielded Cat-5e (or better) cable must be used to stay below the CISPR 22 Class B, ICES-003, and FCC 47 CFR Part 15 Class B emissions limits. Unshielded Cat-5 cable may be used on all other connections.

For fixed or permanent installations, you have the option of running Cat-5 cables inside walls and terminating them with readily available wall panel connectors that include the RJ45 jack. (Solid wire is recommended for permanent installations.) A Cat-5 cable wiring pinout table is included at the end of this document. See page 40.

In addition to standard Category 5e cables, Cat-6 and Cat-6e cables may also be used.

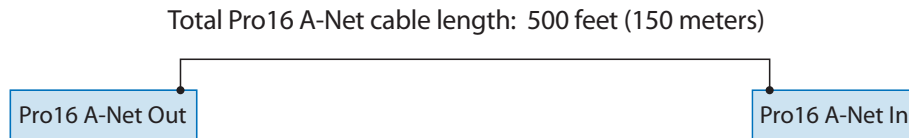
---

✓ **NOTE:** When purchasing Category 5 cables, be sure to buy only standard Cat-5 cables, not those sold as *crossover* cables. A crossover cable is used for file transfer between two computers and is not compatible with your Aviom equipment.

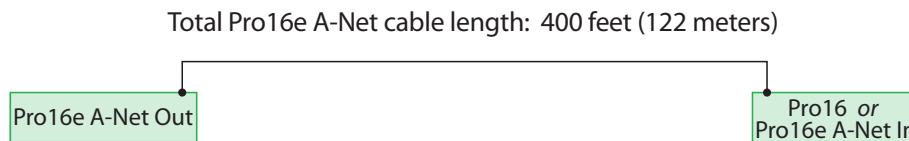
---

## Cable Lengths

For Pro16 applications—connecting one **Pro16** device to another—the Cat-5 cables used with your Aviom products may be up to 500 feet (approximately 150 meters) in length between devices. For example, connecting an AN-16/i-M Mic Input Module to an AN-16/o V.4 Output Module is a Pro16-to-Pro16 connection.



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

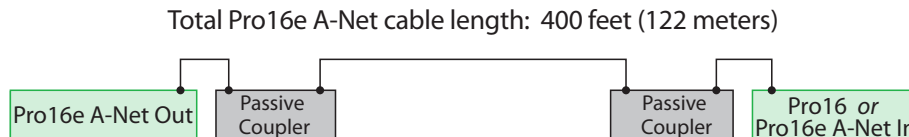


The maximum cable length specification applies to the total cable length between an **A-NET OUT** port on one device and the **A-NET IN** port on the next A-Net capable device in your system.

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

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

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



Pre-made cables in a variety of lengths and colors are available at most computer outlets. Cables may be extended by using a simple passive device called an *inline coupler* to add length to existing cables (as long

as you do not exceed the specified maximum cable length). If you need a longer cable on occasion, this is a simple solution. Note that the maximum cable length performance can be compromised by using inline couplers or other passive connection devices.

## AC Line Conditioning

---

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

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

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

## Cleaning and Maintenance Information

---

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

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

---

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

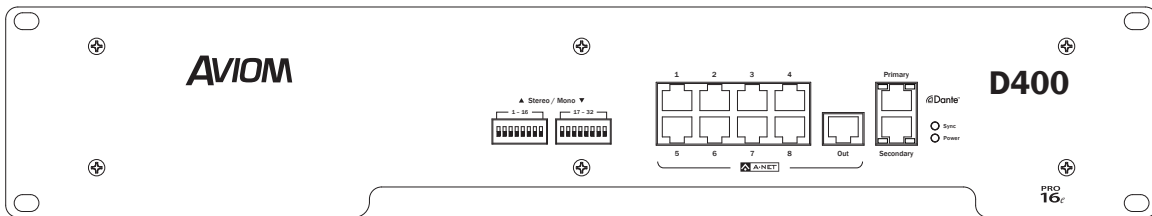
---

# D400 A-Net Distributor

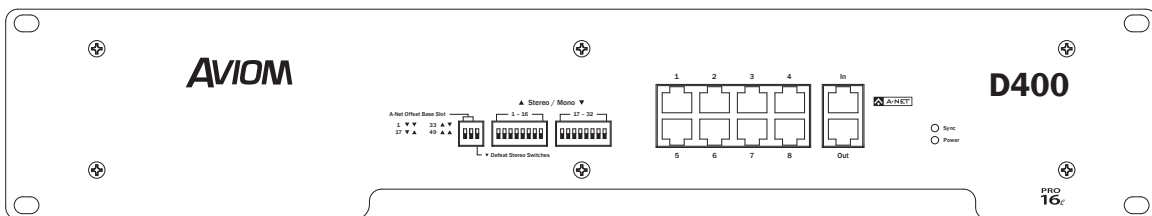
Aviom's series of D400 A-Net® Distributors provides support for parallel connections of up to eight Pro16® devices, including the A640, A360, A320, and A-16II and Personal Mixers.

## Overview

Two versions of the D400 are available. The standard D400 includes a Pro16e® A-Net input, compatible with all Pro16 Series and Pro16e-capable devices. The D400-Dante A-Net Distributor offers connectivity for a Dante™ digital audio network, allowing up to 32 channels to be assigned from a Dante audio network to A640, A360 and A320 Personal Mixers. Each unit has eight A-Net ports that supply both digital audio data and DC power to connected Personal Mixers.



D400-Dante front panel



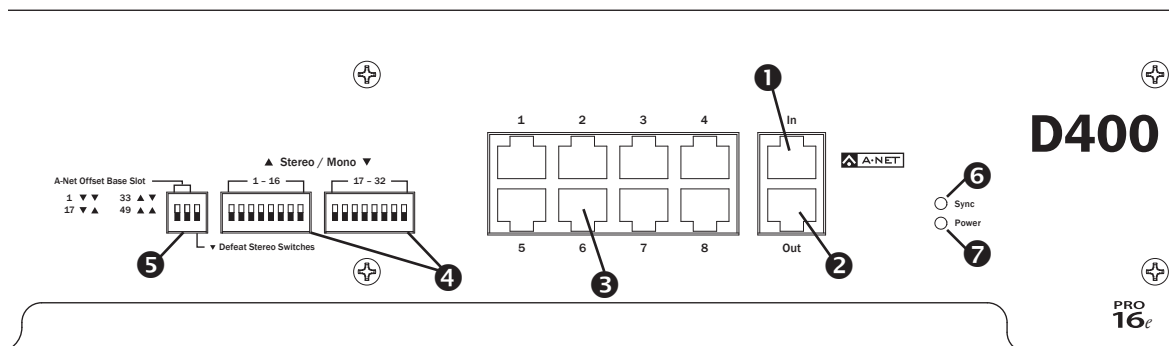
D400 front panel

An unlimited number of D400, D400-Dante, D800, and D800-Dante A-Net Distributors can be used in an A-Net network. For more information on system setup, see page 29.



## D400 Front Panel

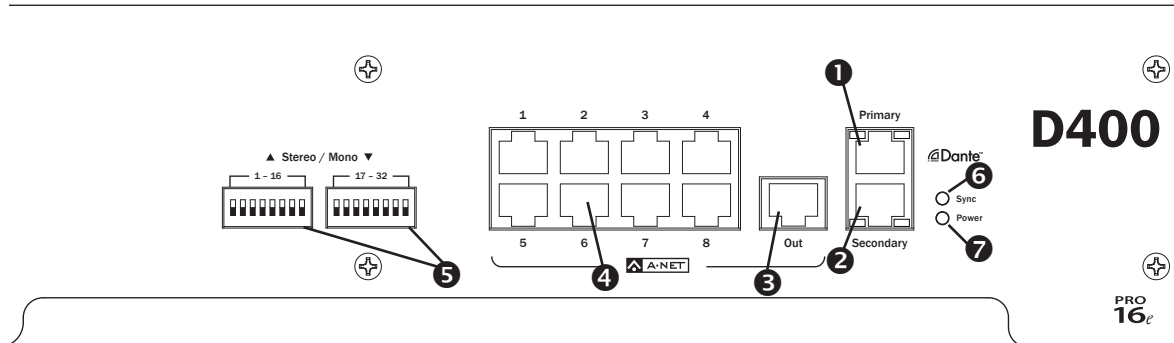
The A-Net version of the D400 A-Net Distributor has the following features.



	FUNCTION
1	Pro16e A-Net In
2	A-Net Out, unpowered
3	A-Net outputs 1-8, with DC power for Personal Mixers
4	Stereo link DIP switches, slots 1-16 and 17-32
5	A-Net Offset Base Slot and Defeat Stereo Links DIP switches
6	Sync LED
7	Power LED

## D400-Dante Front Panel

The Dante version of the D400 A-Net Distributor has the following features.



	FUNCTION
1	Dante Primary port, with LEDs
2	Dante Secondary port, with LEDs
3	A-Net Out, unpowered
4	A-Net outputs 1-8, with DC power for Personal Mixers
5	Stereo link DIP switches, 1-16 and 17-32
6	Sync LED
7	Power LED

## A-Net In, D400

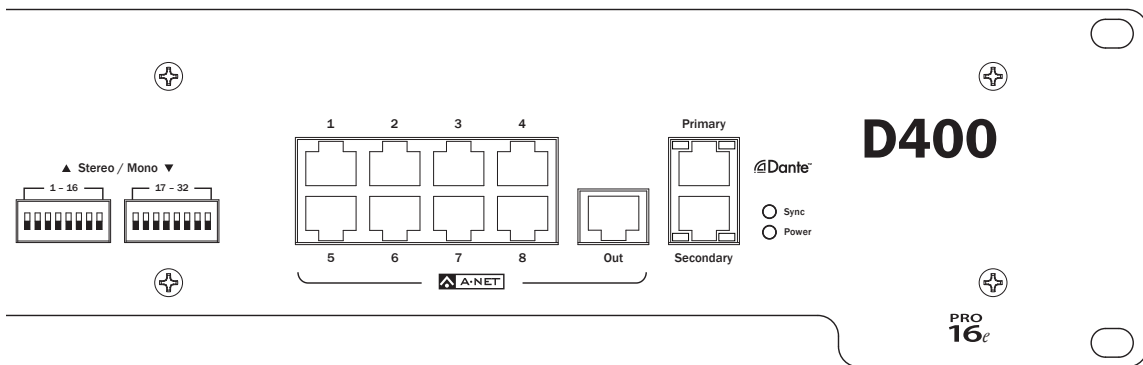
The **A-NET IN** port is available only on the D400 A-Net Distributor. It can accept the A-Net digital data coming from the **A-NET OUT** port of any Pro16 or Pro16e device. Pro16 data has a maximum of 16 channels; Pro16e data has a maximum of 64 total channels.

The A-Net digital data connected to the D400 can come from:

- a single Pro16 analog input module such as the AN-16/i-M Mic Input Module
- a single Pro16e analog input module such as the AN-16/i v.2 Input Module
- a maximum of four AN-16/i v.2 Input Modules cascaded together
- one Pro16 analog input module and up to three AN-16/i v.2 Input Modules
- a single Pro16 A-Net console card
- one Pro16 console card and up to three AN-16/i v.2 Input Modules
- the A-Net Out from another A-Net Distributor

## Dante Connections, D400-Dante

The Dante interface on the D400-Dante A-Net Distributor has two gigabit network ports labeled **PRIMARY** and **SECONDARY**. The Dante **SECONDARY** port can be configured to be a pass-through port or a redundant copy of the **PRIMARY** port. The D400-Dante supports sample rates of 44.1kHz and 48kHz coming from the Dante network. No sample rate converters are available on the D400-Dante.



The D400-Dante has two Dante jacks, Primary and Secondary.

## Dante Primary Port

Use the **PRIMARY** port on the D400-Dante as the default connection to a Dante network. The Dante RJ45 jacks include two LEDs. The yellow LED indicates an active 1GB network connection; the green LED indicates network activity.

The D400-Dante can have a maximum of 32 Dante sources assigned to it. Routing channels requires

the Dante Controller application, available from Audinate. The D400-Dante will retain its Dante channel assignments across power cycles.

For additional Dante system setup information see page 23.

## Dante Secondary Port

---

On the D400-Dante, the Secondary port can be configured to be a redundant or daisy chain connection to the Dante network. This function is set up from within the Dante Controller application on a per-device basis. The default setting is Switched (daisy chain); the Redundant setting requires a Dante network set up with multiple managed 1GB switches. Configuring port settings requires the Dante Controller software available from the Audinate website.

## A-Net Ports 1 to 8

---

The eight A-Net ports (labeled 1-8) on the front panel of the D400 and D400-Dante A-Net Distributors provide a copy of the digital data connected to the unit's A-Net or Dante input to the devices connected to each port. Each A-Net (1-8) port also supplies DC power that can be used to power a Personal Mixer product over the Cat-5 cable, eliminating the need for a local power supply.

---

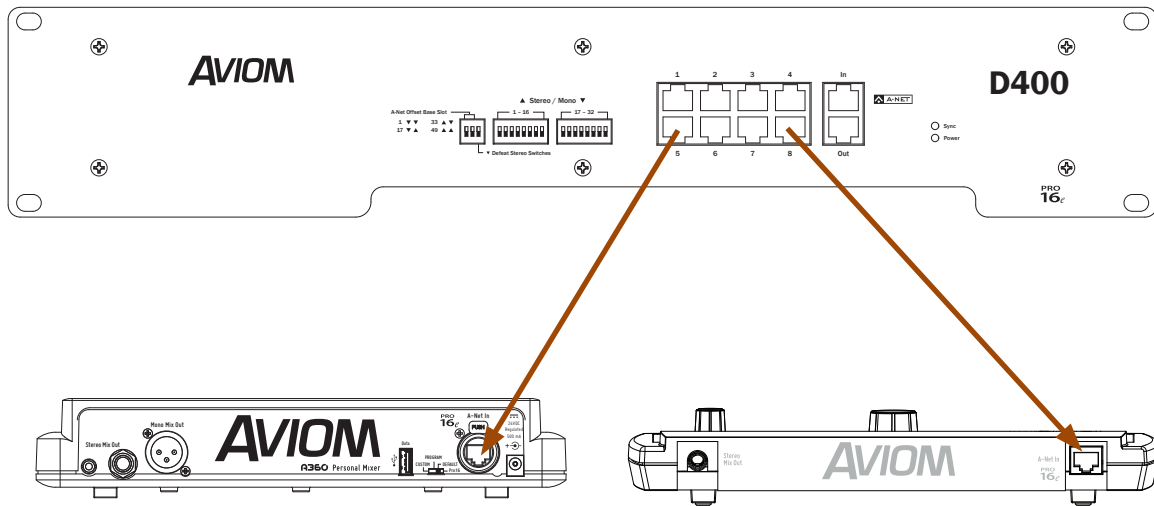
✓ **NOTE:** The DC power supply in the D400 and/or D400-Dante can power only one Personal Mixer per Cat-5 cable per A-Net port.

---

Personal Mixing systems using more than 16 inputs always pass all network slots to all A-Net ports on the D400 and D400-Dante regardless of the type of Personal Mixer connected to the port. Legacy A-16II Personal Mixers will use network slots 1-16 only and will ignore slots 17 and above.

When using the standard D400 with up to four input devices (maximum 64 network slots), the A320 Personal Mixer uses the first 32 channels of the network and will ignore network channels 33-64. Each A640 or A360 Personal Mixer in a system can use any active network slot from 1-64. A640 channels can be mapped using the built-in mapping function. The A360's mix channel buttons can be mapped as needed using the free A360 Channel Manager software available from the Aviom website ([www.Aviom.com](http://www.Aviom.com)).

When a D400-Dante is used, the A320 Personal Mixer uses the first 32 channels of the network in sequential order, while the A640/A360 can use any active network slot from 1-32 in any order by creating custom channel configurations.



Each A-Net port can power one Personal Mixer.

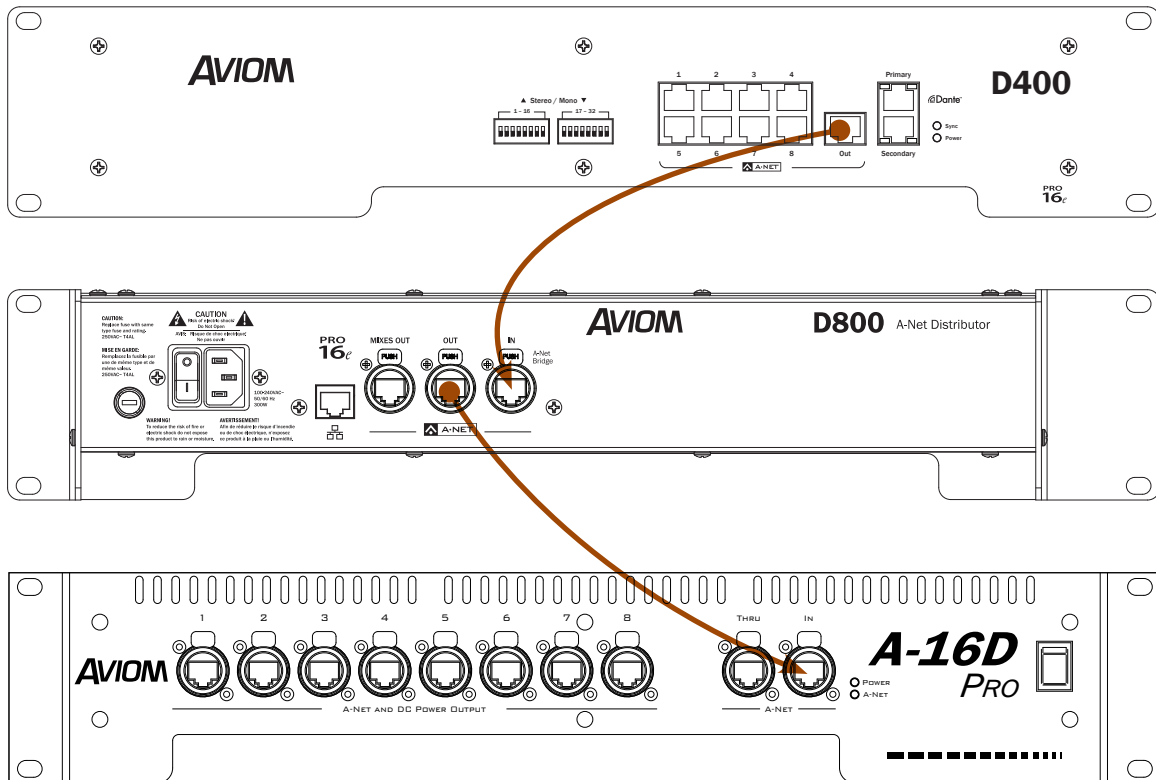
Pro16 devices such as the legacy A-16II Mixer can make use of only network slots 1-16 and will ignore network slots 17-64. The A-Net Offset Base Slot DIP switches on the D400 can be used to select a different set of 16 network slots to be routed to the A-Net Out ports. Note that these switches affect all eight A-Net ports simultaneously. See page 16 for more information about using the A-Net Offset Base Slot function.

## A-Net Out

The **A-NET OUT** port on the D400 and D400-Dante provides an exact copy of the distributor's digital input. It can be used to expand a system by connecting it to the **A-NET IN** port on another A-Net Distributor. Note that this is an unpowered output that carries the same data as the eight DC-powered A-Net (1-8) outputs. It can also be used to add a ninth Personal Mixer to a system, as long as the Personal Mixer is capable of using an external DC power supply.

The **A-NET OUT** port on the standard D400 always provides an exact copy of the network slots connected to its **A-NET IN** port and is not affected by the DIP switch settings for the A-Net Offset Base Slot and/or Defeat Stereo Switches features.

The following example shows an expanded system with a D400-Dante connected to a D800 and A-16D Pro A-Net Distributor.



An expanded network using a D400, D800, and A-16D Pro allows up to 24 Personal Mixers to be connected.

An unlimited number of A-Net Distributors may be used to create a personal mixing system. Simply connect A-Net Out to A-Net In.

## Stereo Link DIP Switches

Stereo pairs are a powerful feature that allow two channels to be accessed from a single mix channel button on the A640, A360 and A320 Personal Mixers. The two blocks of 8 DIP switches on the front panel of the D400 and D400-Dante can be used to link pairs of adjacent network channels/slots.

On the D400-Dante, the stereo links must be set up at the A-Net Distributor; stereo links are created after the incoming Dante data is converted to A-Net. Push a DIP switch to the up position to link a pair of channels. Stereo links always use an odd/even pair (1-2, 15-16, 31-32, etc.) of network slots. Changes may be made at any time; all Personal Mixers update immediately to reflect the changes.

Typically, most users will set up stereo links at the system's input device(s). On the standard version of the D400 the user has the option of creating stereo pairs at *either* the input device or on the D400 front panel. A bypass DIP switch—**DEFEAT STEREO SWITCHES**—is included that will bypass all stereo link settings on the D400's front panel. Its default position is *down* (front panel switches bypassed) assuming that the personal mixing system's input devices are providing the stereo links.

Remember that stereo links are a global setting that affects all Personal Mixers in the system.

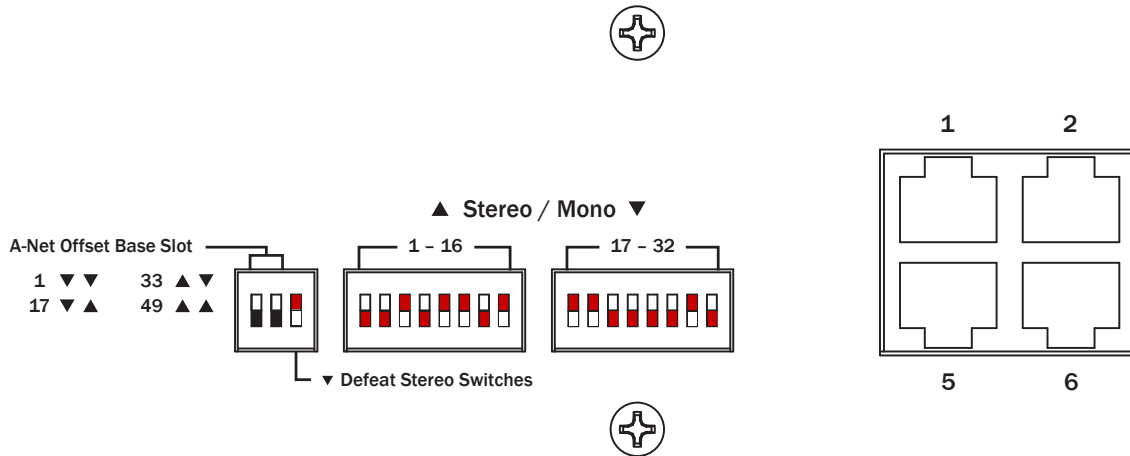
### DIP Switch Block 1

DIP Switch	Down	Up
1	Mono	Stereo Link Slots 1-2
2	Mono	Stereo Link Slots 3-4
3	Mono	Stereo Link Slots 5-6
4	Mono	Stereo Link Slots 7-8
5	Mono	Stereo Link Slots 9-10
6	Mono	Stereo Link Slots 11-12
7	Mono	Stereo Link Slots 13-14
8	Mono	Stereo Link Slots 15-16

### DIP Switch Block 2

DIP Switch	Down	Up
1	Mono	Stereo Link Slots 17-18
2	Mono	Stereo Link Slots 19-20
3	Mono	Stereo Link Slots 21-22
4	Mono	Stereo Link Slots 23-24
5	Mono	Stereo Link Slots 25-26
6	Mono	Stereo Link Slots 27-28
7	Mono	Stereo Link Slots 29-30
8	Mono	Stereo Link Slots 31-32

Any combination of the Stereo Link DIP switches may be used; all Personal Mixers will update automatically to reflect the changes.



This example shows stereo links set up on the D400 for network slots 5-6, 9-10, 11-12, and 15-16 in block #1. Network slots 17-18, 19-20, and 29-30 are stereo in block #2 (switch handles are shown in red).

Any combination of the Stereo Link DIP switches may be used; in the up position, stereo links are transmitted over A-Net to all Personal Mixers in the network. Be sure to set the **DEFEAT STEREO SWITCHES** DIP Switch to the **up** position to make use of the local Stereo Link settings made with the hardware switches on the front panel of the D400.

## A-Net Offset Base Slot

On the D400, the **A-NET OFFSET BASE SLOT** feature allows you to choose the starting channel to be output from the A-Net Out ports to all connected Personal Mixers. It can be used with the A640, A360 and A320, as well as legacy A-16II Personal Mixers. This feature is useful in high channel count systems (with up to 64 inputs) and/or multiple A-Net Distributors where you want to have different network slots assigned to different players in a performing ensemble. Incoming A-Net slots are rearranged before being sent to the connected Personal Mixers; the Stereo Link switches are implemented *after* the base slot selection.

The A-Net Offset Base Slot feature only applies to the eight powered A-Net (1-8) outputs on the D400; the unpowered **A-NET OUT** is not affected and always passes an exact copy of all incoming A-Net data. Four settings are possible:

DIP Switch Setting	Channel Offset
▼ ▼ <b>Down-Down</b>	Default; Channel 1 = Mixer Button 1
▼ ▲ <b>Down-Up</b>	Channel 17 = Mixer Button 1
▲ ▼ <b>Up-Down</b>	Channel 33 = Mixer Button 1
▲ ▲ <b>Up-Up</b>	Channel 49 = Mixer Button 1



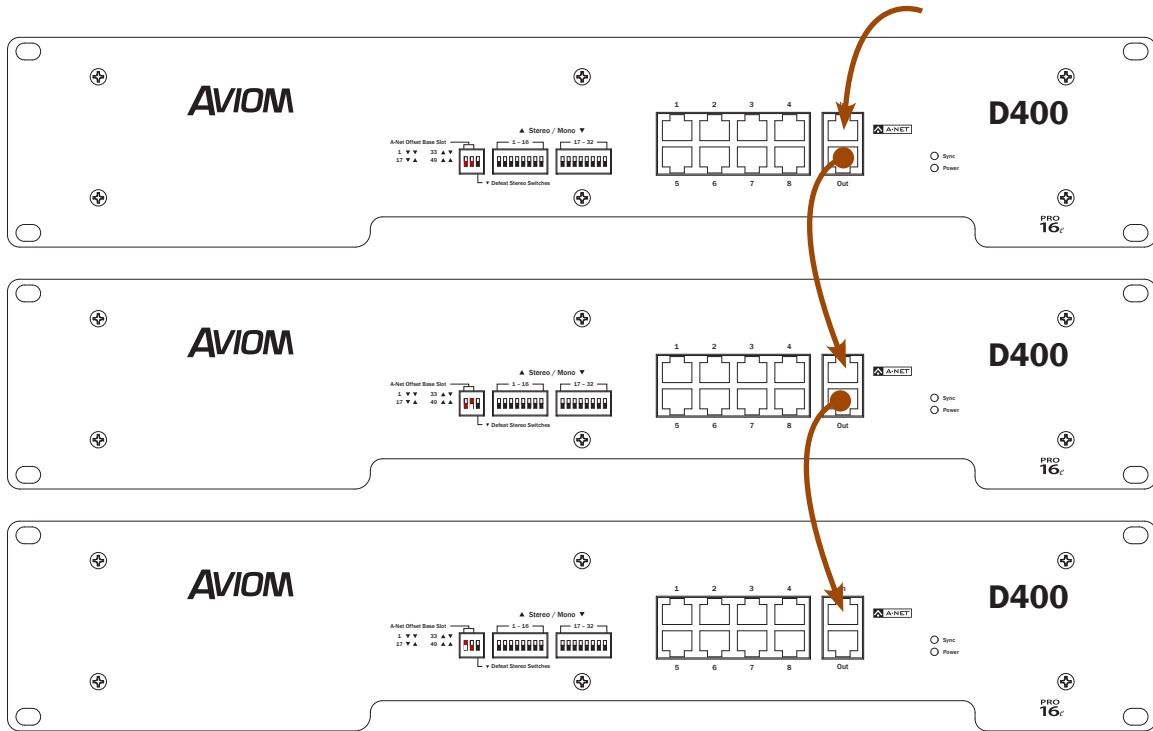
## Channel Mapping

The following table shows how the various A-Net Offset Base Slot DIP switch settings map channels to the Personal Mixers. In this simple example all channels are mono.

Mixer Button	Network Slot - Mono			
	▼ ▼	▼ ▲	▲ ▼	▲ ▲
1	1	17	33	49
2	2	18	34	50
3	3	19	35	51
4	4	20	36	52
5	5	21	37	53
6	6	22	38	54
7	7	23	39	55
8	8	24	40	56
9	9	25	41	57
10	10	26	42	58
11	11	27	43	59
12	12	28	44	60
13	13	29	45	61
14	14	30	46	62
15	15	31	47	63
16	16	32	48	64

Up to four unique zones of 16-channel monitor mixes can be created using this feature.

This example shows a system using three D400s where each unit provides a different set of 16 A-Net slots to the Personal Mixers, creating a three-zone personal mixing system from an incoming 48-channel A-Net stream.



Each D400 uses a different 16-channel bank of the incoming A-Net data.

The first D400 outputs network slots 1-16 to the Personal Mixers, the second D400 outputs slots 17-32, and the third D400 is set to output slots 33-48.

## Stereo Channels

This table shows how stereo channels are handled when the A-Net Offset Base Slot feature is used in a system with 32 or more input sources. Any combination of stereo and mono channels may be used when designing a personal mixing system, so it's important to understand how the stereo links affect the audio routing.

The example shows every mix channel button with a stereo channel assignment.

Mixer Button	Network Slot - Stereo			
	▼▼	▼▲	▲▼	▲▲
1	1-2	17-18	33-34	49-50
2	3-4	19-20	35-36	51-52
3	5-6	21-22	37-38	53-54
4	7-8	23-24	39-40	55-56
5	9-10	25-26	41-42	57-58
6	11-12	27-28	43-44	59-60
7	13-14	29-30	45-46	61-62
8	15-16	31-32	47-48	63-64
9	17-18	33-34	49-50	1-2
10	19-20	35-36	51-52	3-4
11	21-22	37-38	53-54	5-6
12	23-24	39-40	55-56	7-8
13	25-26	41-42	57-58	9-10
14	27-28	43-44	59-60	11-12
15	29-30	45-46	61-62	13-14
16	31-32	47-48	63-64	15-16

In the example above, when both A-Net Offset Base Slot switches are down, changing the assignment for mix channel button #6 from stereo to mono would route only slot 11 to the mix channel; slot 12 would be unused.

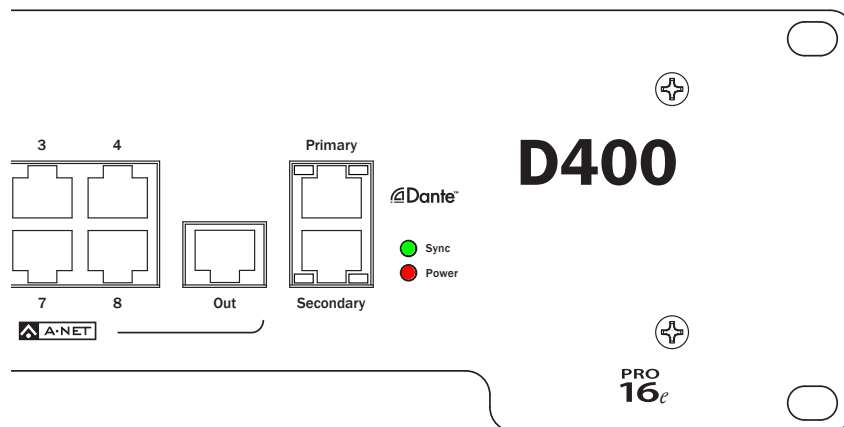
## Sync LED

The front panel **Sync** LED lights green on the A-Net version of the D400 A-Net Distributor when a valid A-Net stream is connected to the unit's **A-Net In** port.

On the D400-Dante version of the product, the front panel **Sync** LED will light green when the unit is connected to a Dante network *and* is receiving a valid clock signal over the network.

## Power LED

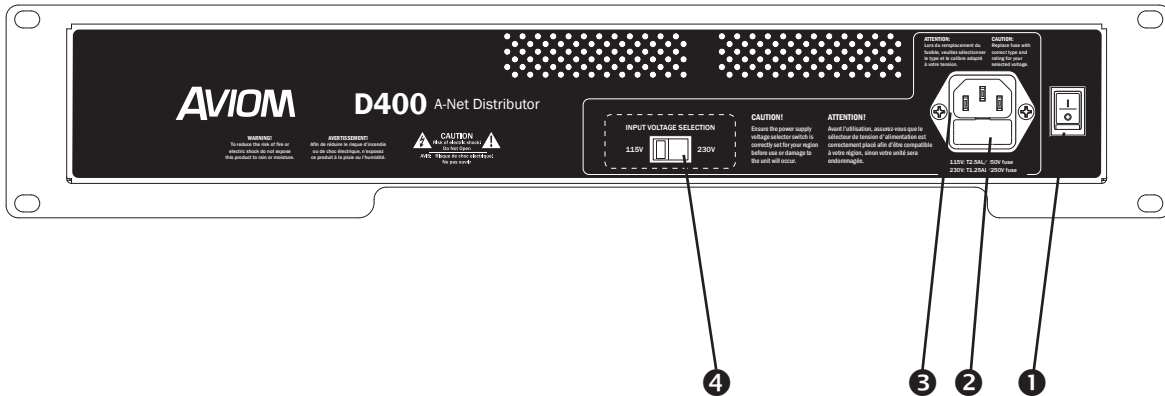
The red **Power** LED indicates that the D400 or D400-Dante is powered on.



**Sync** (green) and **Power** (red) LEDs on the D400 and D400-Dante front panel

## D400 Rear Panel

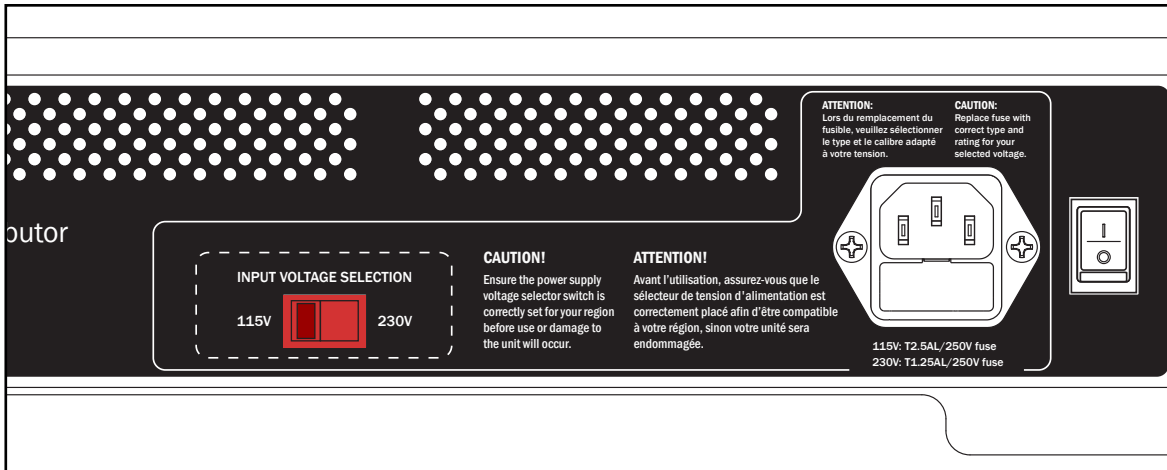
The rear panel features are found on both the standard and Dante versions of the D400.



	FUNCTION
1	Power On/Off switch
2	Fuse holder
3	AC Power connection, IEC
4	Input Voltage Selection switch

## Power Supply

The rear panel of the D400/D400-Dante A-Net Distributor contains a standard IEC power input for the unit. The power supply in the D400 can be set for 115V or 230V operation at rates from 50 to 60 Hz by using the red **INPUT VOLTAGE SELECTION** switch in the center of the rear panel. (See the illustration below.)



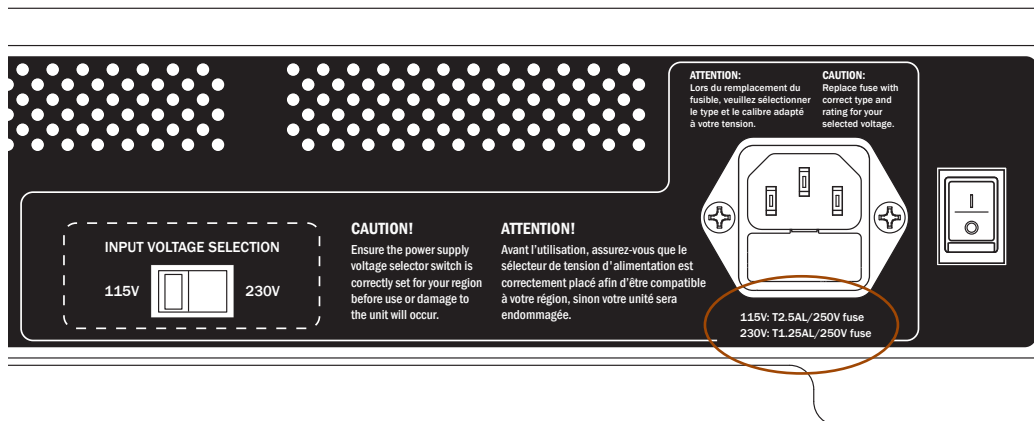
Set the D400 for the proper voltage prior to use.

**CAUTION:** The D400 must be set for the proper input voltage for your region before use or damage to the unit will occur.

Replaceable IEC cables for AC power systems throughout the world are available from many electronics dealers. Avoid using cable adapters whenever possible. Replacement cables must provide an earth ground connection.

## Fuse

The D400's power supply fuse is contained in the IEC power connector assembly. To change a fuse, first unplug the unit from the AC wall receptacle. Remove the fuse access panel to reveal the fuse. Always replace the fuse with one of the same rating for the input voltage being used. For 115V operation use a fuse rated **T2.5AL/250V**; for 230V operation use a fuse rated **T1.25AL/250V**.



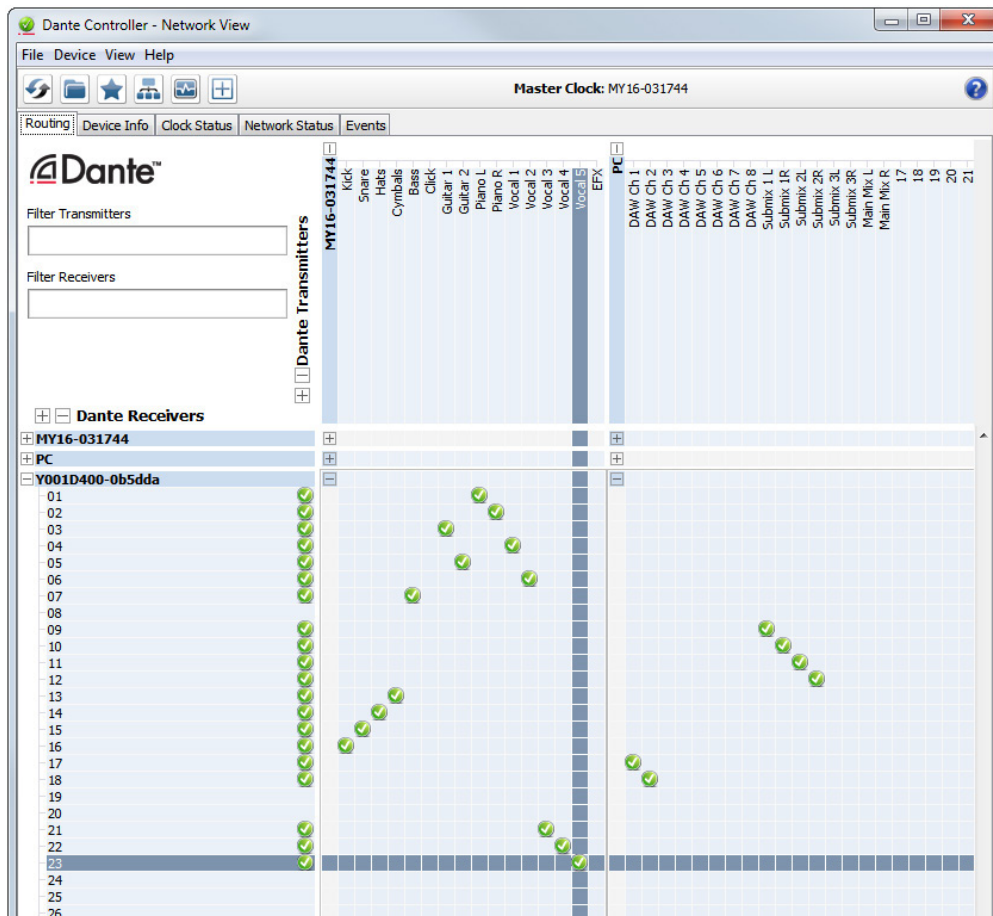
Always replace the fuse with one rated for the input voltage in use.

# Dante Setup

The D400-Dante requires some additional signal routing configuration using Audinate's Dante Controller software.

## Routing Channels

Any active audio resource in a Dante network may be routed to the D400-Dante A-Net Distributor. Routing channels requires the Dante Controller software, available from the Audinate website ([www.audinate.com](http://www.audinate.com)). It can be run on either Mac or PC computers. Complete documentation for the software is available from Audinate.



The Dante Controller routing grid is used to assign channels to any device in the network.

The main window of the Dante Controller software is essentially an X/Y grid that allows a channel from one Dante device to be routed to another. Devices that transmit are shown horizontally across the top of the grid; receiving devices are in the vertical column along the side. Open or close any device's Transmit or Receive panel by clicking the plus or minus sign (+/-) next to its name.

Use the mouse to activate or deactivate a channel by clicking in a cell. A green check mark symbol indicates a valid connection. Once channels are configured for your application, the Dante Controller software application can be closed, and the computer can be removed from the network if desired. Channel transmit/receive settings are stored within each Dante device until they are changed using the Dante Controller software. The Dante Controller software allows you to save a network-wide configuration preset which allows routings to be backed up, changed and recalled as needed.

---

✓ **NOTE:** Each Dante device in a network is unique, and the channel routings created using Dante Controller are saved within the Dante devices themselves. These routings will need to be recreated if any Dante device is replaced with an identical device because the original unit was removed for maintenance or repair.

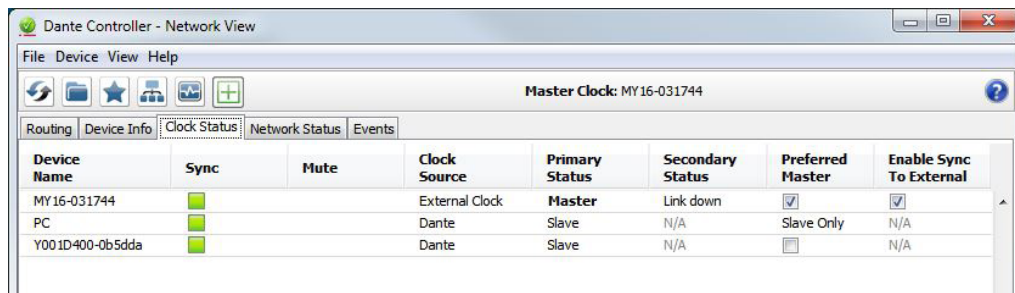
---

Devices with built-in Dante channel routing capabilities, such as Yamaha CL and QL Series digital consoles, can assign channels to Dante devices from within the console's user interface and may not require the Dante Controller application.

## Clock Status

---

The Network View of Dante Controller contains a Clock Status tab that displays network clock source and sync settings.



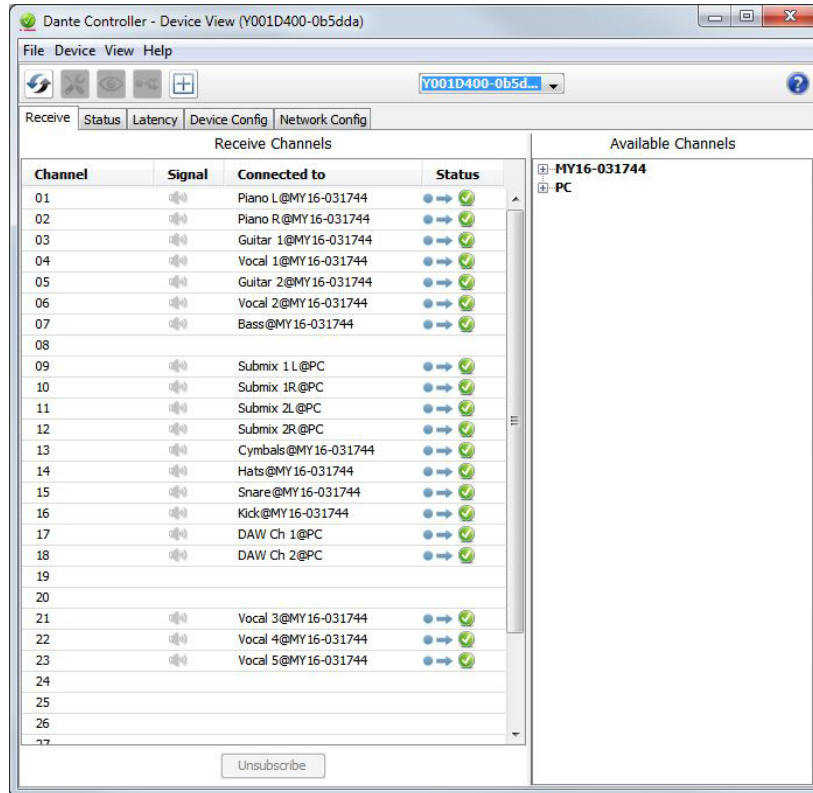
A Dante network always has one device designated as the Master Clock source.

You have the option of assigning one device in your Dante network to be the Preferred Master; this device will be the source of the network clock as long as the device is powered on and connected to the other devices in the network. Click the **PREFERRED MASTER** check box to assign this function to a device.



## Device View

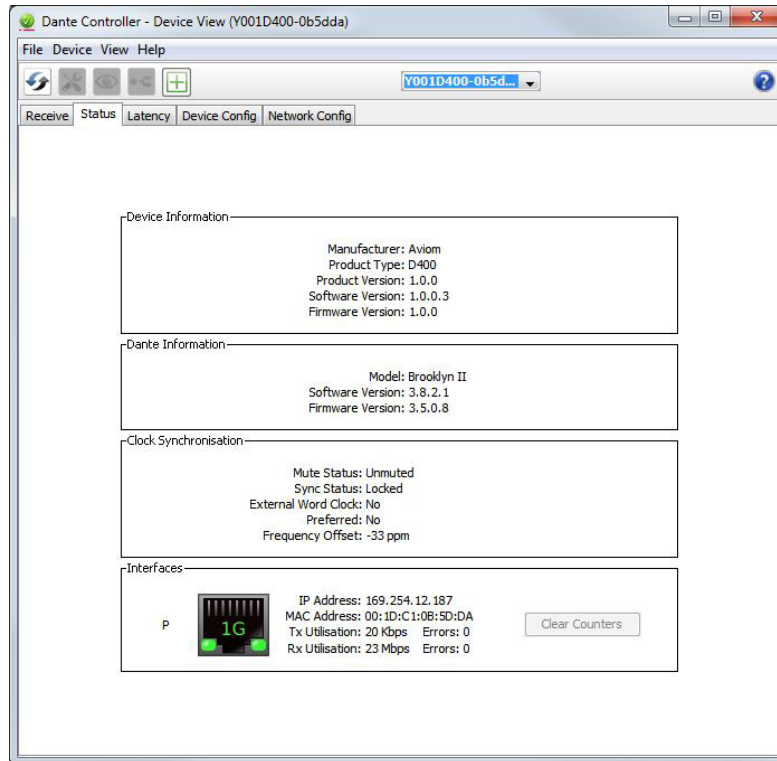
Opening the Device View for any Dante device in the network will display a tabbed view of additional settings for the device. There is an overview of the device's firmware, its transmit and receive settings, as well as settings for the sample rate and redundancy.



The Receive tab shows Dante channels assigned to the D400.

## Status Tab

Choose the Status tab of the Device View to display the current firmware and other manufacturer-related information.



The Status view for the D400-Dante displays its current firmware as well as network connection status.

There are no user-configurable settings in the Status tab for the D400-Dante.

## Device Config Tab

The settings for Sample Rate and Device Latency are found within the Device Config tab. Note that each device in a Dante network has a separate setting for Sample Rate. While it is possible to have devices with different sample rates in the same network, you cannot patch Dante channels between devices with mismatched sample rates.

Latency	Maximum Network Size
<input type="radio"/> 0.15 msec	Gigabit network with one switch
<input type="radio"/> 0.25 msec	Gigabit network with three switches
<input type="radio"/> 0.5 msec	Gigabit network with five switches
<input checked="" type="radio"/> 1.0 msec	Gigabit network with ten switches or gigabit network with 100Mbps leaf nodes
<input type="radio"/> 2.0 msec	Gigabit network with 100Mbps leaf nodes
<input type="radio"/> 5.0 msec	Safe value

Choose a sample rate from the drop-down menu for each network device.

To change the sample rate for the D400-Dante, select a new rate from the drop-down menu. Use the radio buttons in the Device Latency section to choose a latency value that best matches the network you have set up. The D400-Dante is compatible with sample rates of 44.1 and 48kHz. The D400-Dante does not contain sample rate converters.

## Network Config Tab

The settings for the D400-Dante's Primary and Secondary ports are found within the Network Config tab of the Device View. Two settings are available in the drop-down menu. When set to **SWITCHED**, both ports are identical; Dante devices can be daisy chained. When set to **REDUNDANT**, the Secondary port will serve as a redundant copy of the data appearing at the Primary port. Note that using the Redundant setting requires that the network be configured using a pair of gigabit switches.

The screenshot shows the 'Network Config' tab with the following sections:

- Dante Redundancy:** Current: Switched, New: Switched (dropdown menu with options: Switched, Redundant).
- Addresses:** Radio buttons for 'Obtain an IP Address Automatically (default)' and 'Manually configure an IP Address'. Fields for IP Address, Netmask, DNS Server, and Gateway. A note: 'This device does not support static addressing'. Buttons: Apply, Revert.
- Reset Device:** Buttons: Reboot, Clear Config.

Choose either Switched or Redundant from the drop-down menu.

Refer to the Audinate Dante Controller user guide for additional information about using this software as well as setting up a redundant Dante network.

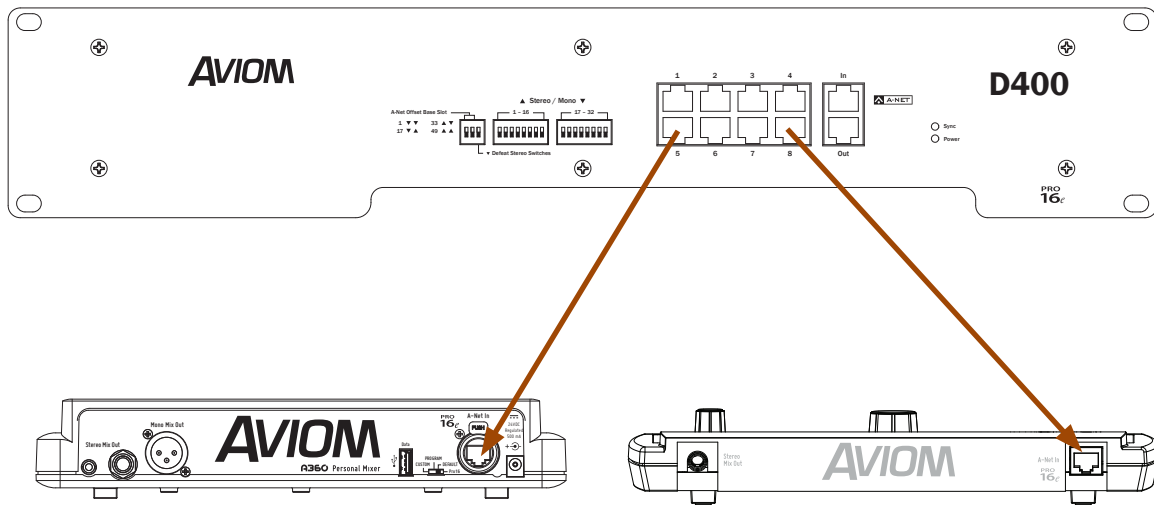
# Personal Mixing Systems

A personal mixing system can be configured with a variety of input sources including analog, digital console cards, Dante network devices and Dante-enabled digital mixing consoles. Up to eight Personal Mixers (A640, A360, A320, A-16II or A-16R) can be connected per D400 or D400-Dante. This section shows some typical personal mixing system configurations.

## Connecting Personal Mixers

To connect a Personal Mixer to the D400 or D400-Dante:

- Connect a Cat-5e cable from one of the eight powered A-Net ports on the A-Net Distributor to the **A-Net In** port on the Personal Mixer.
- DC power is supplied automatically to the Personal Mixer—no external DC power supply is required.
- Any combination of A640, A360, A320, A-16II and A-16R Personal Mixers may be used.



Connect an **A-Net** (1-8) port on the D400 or D400-Dante to the **A-Net In** on a Personal Mixer.

✓ **NOTE:** For connections from the D400 and D400-Dante to Personal Mixers, shielded Cat-5e (or better) cable must be used to stay below the CISPR 22 Class B, ICES-003, and FCC 47 CFR Part 15 Class B emissions limits.

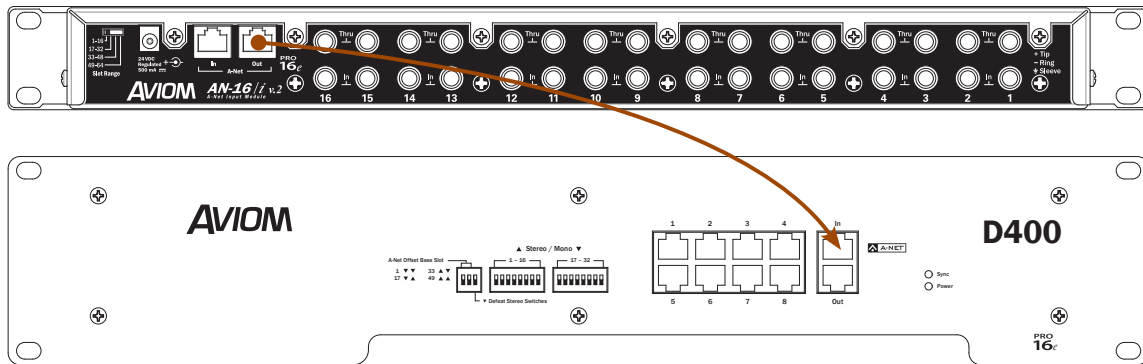
Unshielded Cat-5e (or better) cable may be used on all other connections.

The A-Net outputs on the D400 and D400-Dante can be connected to any A-Net compatible device, including other A-Net distributors, allowing flexible routing and system configurations as well as virtually unlimited system expansion.

## 16-Channel Personal Mixing Systems

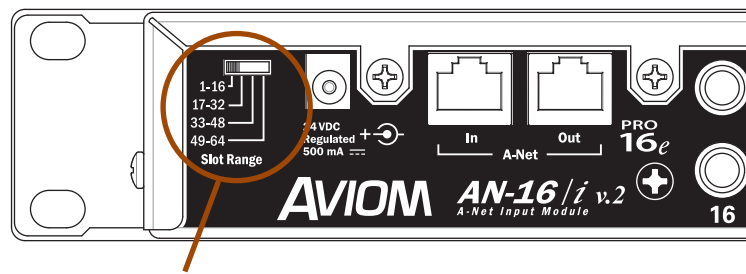
### Analog Input

This system uses one D400 and a single analog input device or digital console card; 16 total network slots are available to the Personal Mixers. To configure, connect the **A-NET OUT** on the input device to **A-NET IN** on the D400.



**A-NET OUT** on the analog input device is connected to **A-NET IN** on the D400.

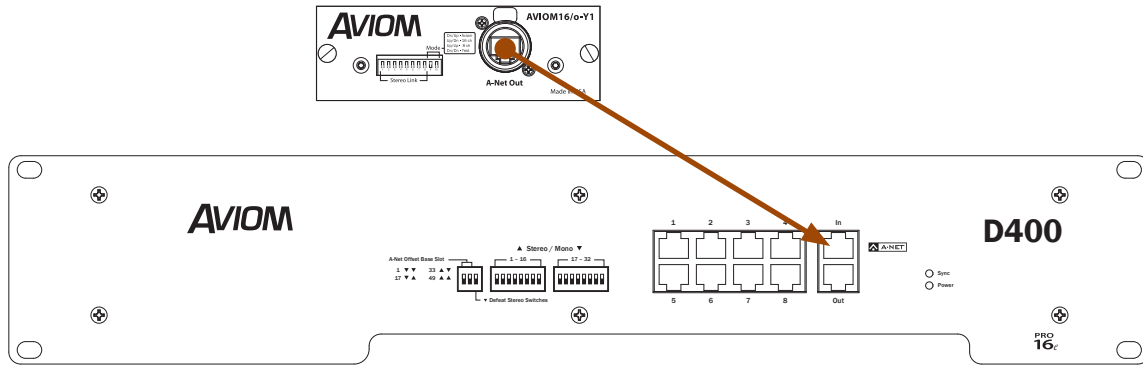
The **A-NET OFFSET BASE SLOT** DIP switches on the D400 should be set to the default 1-16 setting (down, down). Assign stereo links as needed. When using a single AN-16/i v.2 Input Module, be sure to set its rear panel **SLOT RANGE** switch to **1-16**.



The Slot Range must be set to **1-16** for 16-channel systems.

## Digital Console Card

This system uses a single console card and one D400 A-Net Distributor. A compatible Pro16 digital console card from any of Aviom's technology partners may be substituted for the Y1 Yamaha card shown in the diagram. Connect **A-NET OUT** on the console card to **A-NET IN** on the D400 with a standard Cat-5 cable.

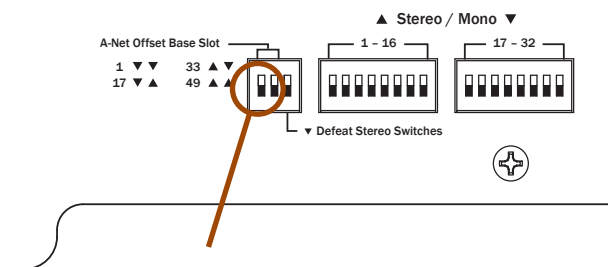


**A-NET OUT** from the console card is connected to **A-NET IN** on the D400.

The **A-NET OFFSET BASE SLOT** DIP switches on the D400 should be set to the default slots 1-16 setting. Assign stereo links as needed. Stereo links may be created on the console card or on the D400.

## About A-Net Offset Base Slot

The A-Net Offset Base Slot DIP switches on the D400 are used to select which bank of 16 channels should be mapped onto the Personal Mixer's channel buttons. For 16-channel systems, these DIP switches should be set to Slot range 1, both switches down. Setting the DIP switches to any other range will route non-existent network channels to the Personal Mixers.



Set the Base Slot to "1" for 16-channel systems.

## Stereo Links

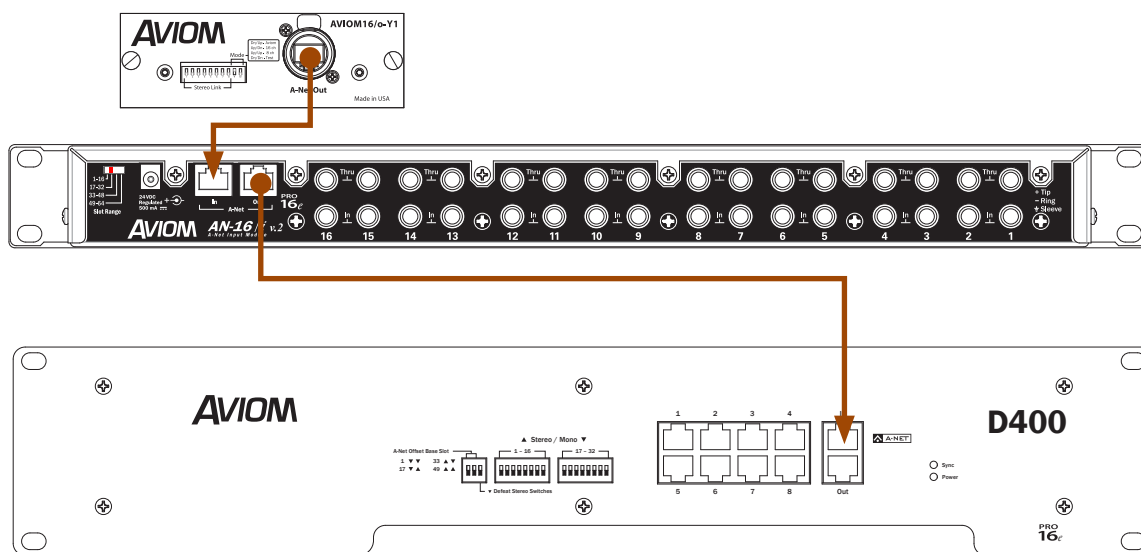
The D400 and D400-Dante have a set of front-panel Stereo Link DIP switches that are capable of linking adjacent odd/even channel pairs in the A-Net stream. You have the option of using the stereo link switches on the network's input device (analog input module or digital console card) *or* on the D400. If the stereo links are set at the network's input device, set the **DEFEAT STEREO SWITCHES** DIP switch in the down position; links from the D400's front panel are ignored.

## 32 Channels - Analog & Digital Inputs

This hybrid system uses one digital console card plus one analog AN-16/i v.2 Input Module to provide up to 32 inputs to the network when connected to the A-Net version of the D400. The console card provides slots 1-16 of the network; the AN-16/i v.2 Input Module provides slots 17-32.

To configure this system:

- Connect **A-NET OUT** on the console card to **A-NET IN** on the AN-16/i v.2 with a Cat-5 cable.
- Set the **SLOT RANGE** switch on the AN-16/i v.2 to **17-32**.
- Connect a Cat-5 cable from **A-NET OUT** on the AN-16/i v.2 to **A-NET IN** on the D400.
- Set Stereo Links as needed on the console cards and/or AN-16/i v.2.
- Connect Personal Mixers to the D400's front panel A-Net ports.
- If desired, create custom channel maps for A640 and A360 Personal Mixers.



The **A-NET OUT** from the console card connects to the analog input module's **A-NET IN** port. The Pro16e **A-NET OUT** on the AN-16/i v.2 connects to **A-NET IN** on the D400.

- 
- ✓ **NOTE:** If A-16II Personal Mixers will be used with A640, A360 and A320 Personal Mixers in this type of network, it is important to note that the A-16II will ignore network slots 17 and above. Make sure you assign audio sources that are critical for users of the A-16II to slots 1-16 of the network.
-

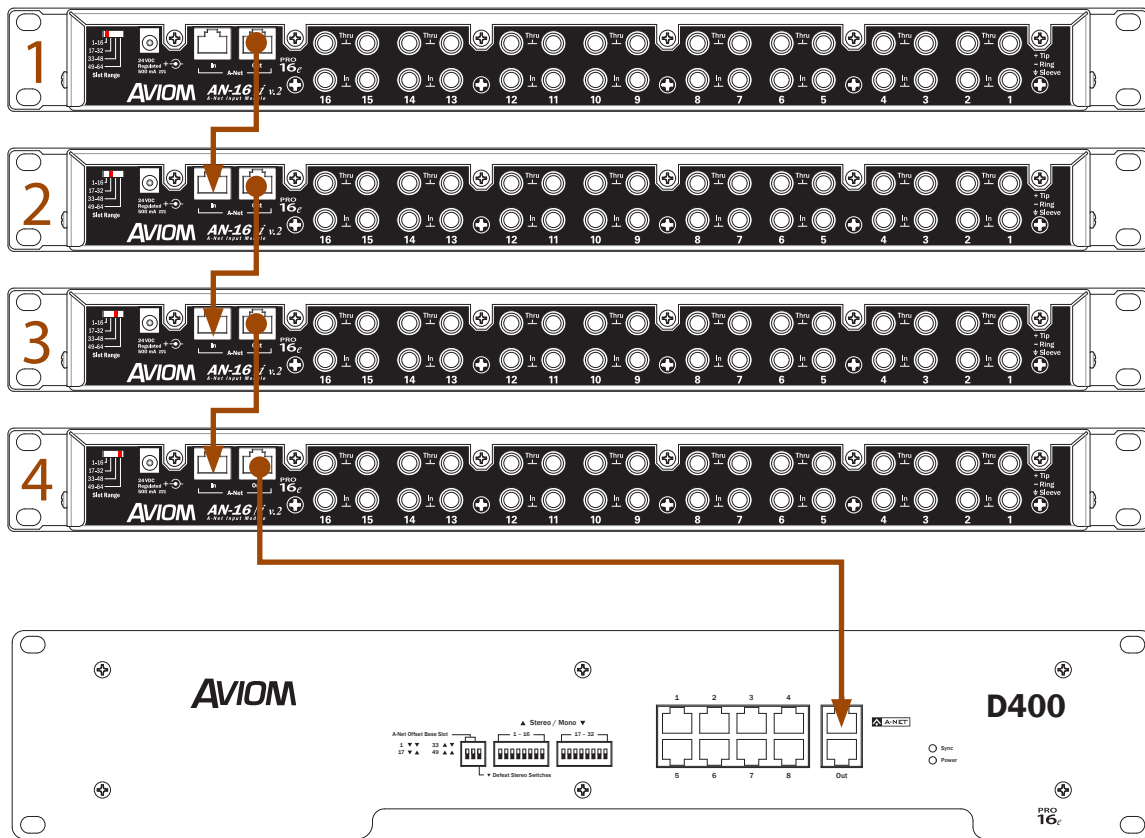


## 32-64 Channels - Analog Inputs

Up to four analog input devices may be connected to a D400 by cascading the A-Net ports on the input devices. The first input device in the system (Input Module 1 in the diagrams) can be substituted with an original AN-16/i Input Module, AN-16/i-M Mic Input Module, or a digital console card. By default these devices supply network slots 1-16.

To configure this system:

- Set the **SLOT RANGE** switch on AN-16/i v.2 Input Module #1 to **1-16** (not required if using a legacy analog input device or a console card).
- Connect **A-NET OUT** on device #1 to the **A-NET IN** on AN-16/i v.2 Input Module #2 with a Cat-5 cable.
- Set the **SLOT RANGE** switch on AN-16/i v.2 Input Module #2 to **17-32**.
- Connect **A-NET OUT** on device #2 to **A-NET IN** on AN-16/i v.2 Input Module #3.
- Set the **SLOT RANGE** switch on AN-16/i v.2 Input Module #3 to **33-48**.
- Connect **A-NET OUT** on device #3 to **A-NET IN** on AN-16/i v.2 Input Module #4.
- Set the **SLOT RANGE** switch on AN-16/i v.2 Input Module #4 to **49-64**.
- Connect **A-NET OUT** on device #4 to the **A-NET IN** on a the D400.



Four analog input modules create a 64-channel network.

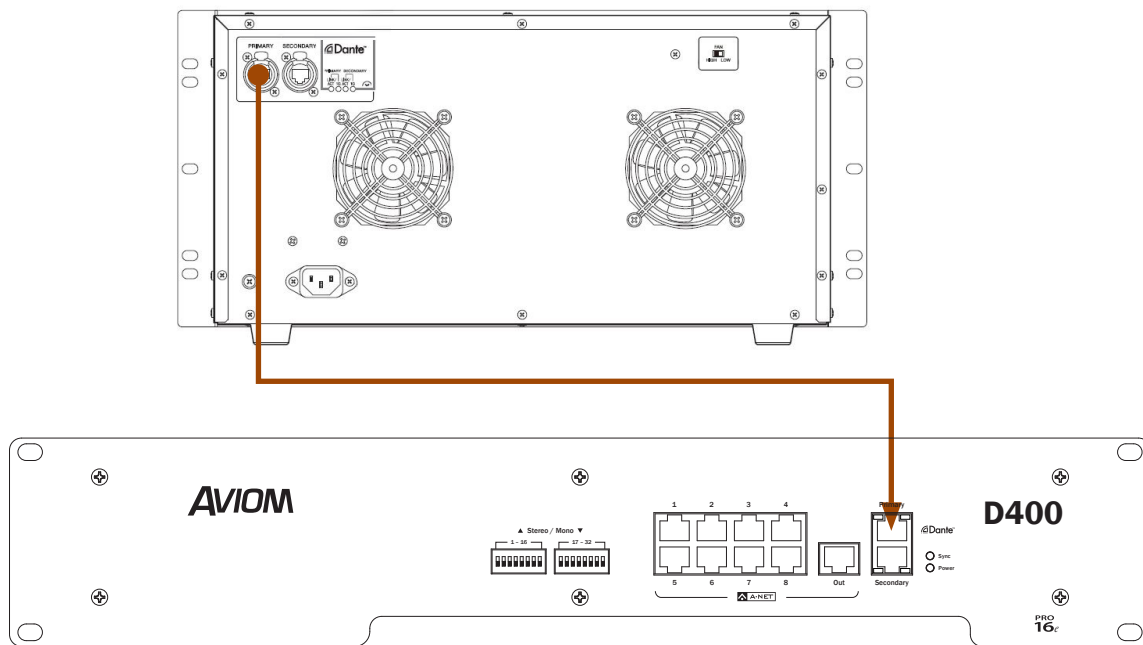
A640 and A360 Personal Mixers can be configured to use any of the active network slots; the A320 can use only slots 1-32 and will ignore slots 33-64.

## Dante Systems

A Dante-enabled mixing console or audio network can be connected to the D400-Dante to provide up to 32 channels from the Dante network to Personal Mixers.

To configure this system:

- Connect a Cat-5 cable from the Dante network to the Dante **PRIMARY** port on the D400-Dante's front panel.
- In the Dante Controller software, set the D400-Dante to operate at the same sample rate as the other devices in the Dante network (44.1 or 48kHz).
- Confirm that the D400-Dante is set for the proper Dante topology—**SWITCHED** or **REDUNDANT**—as defined by your Dante network's setup.
- Route up to 32 Dante network channels from transmitting devices to the D400-Dante using the Dante Controller software.
- Set stereo links as needed using the DIP switches on the front panel of the D400-Dante.
- Connect Personal Mixers to the front-panel A-Net ports of the D400-Dante.



Connect a Cat-5 cable from a Dante device to the Dante **PRIMARY** port on the D400-Dante.

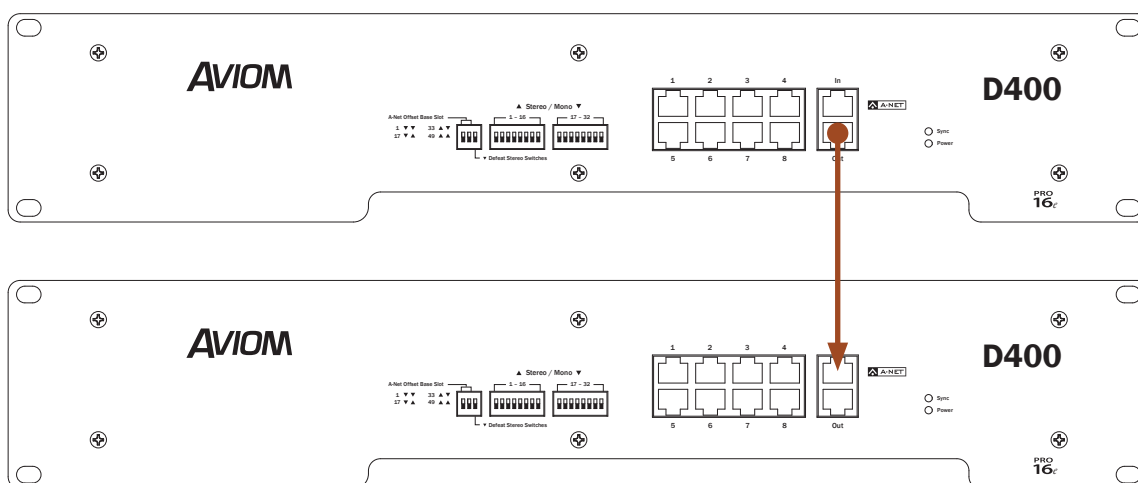
Additional Dante devices can be added as needed by connecting them via the **SECONDARY** port on the D400-Dante.

## Expanding a Personal Mixing System

Any number of Pro16 A-Net devices can be used in a personal mixing system, including multiple A-Net Distributors. To expand a system, additional A-Net Distributors can be connected to any available **A-Net Out** port on a Pro16 device. In a Dante system, only one Dante-enabled A-Net Distributor is required; systems can then be expanded by adding non-Dante versions of the A-Net Distributor.

## Using Multiple A-Net Distributors

A-Net Distributors can be cascaded. To add another D400 to a system, simply connect a standard Cat-5 cable from the **A-Net Out** of the first D400 to the **A-Net In** on the second D400. See the following diagram (the first D400 in the diagram can be a D400-Dante if the input sources are coming from a Dante network).



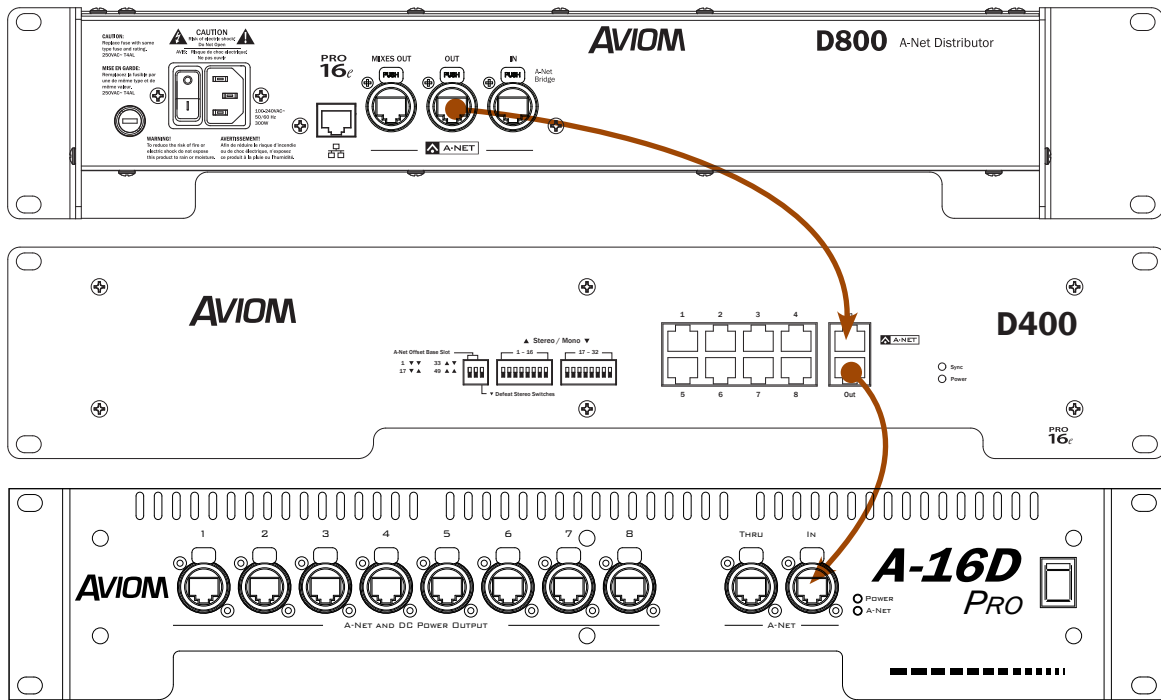
Connect **A-Net Out** on the first D400 to **A-Net In** on a second D400 to expand a system.

Two D400s connected in a daisy chain provide sixteen powered A-Net outputs. Any number of D400 A-Net Distributors can be connected to provide additional expansion by connecting the **A-Net Out** jack of one D400 to the next distributor's **A-Net In** jack. Cat-5 cables can be up to 400 feet (120 meters) long between devices.

## Using the D400 With the D800 and A-16D Pro

A D800 (or D800-Dante) may be used along with an A-16D Pro A-Net Distributor in the same system. Connecting a D400 and/or an A-16D Pro after a D800 allows up to 64 network slots to be transmitted to every port on each A-Net Distributor; use this as the default patching method if you are using A320 and A360 Personal Mixers. Up to 64 inputs may be made active in the network by using analog input devices, console cards connected to an SB4 System Bridge and D800, or a Dante network.

To connect a D800 A-Net Distributor to a D400 and an A-16D Pro A-Net Distributor, patch a Cat-5 cable from the **A-Net Out** port on the D800 or D800-Dante's rear panel to the **A-Net In** on the front panel of the D400. Patch another cable from **A-Net Out** on the D400 to **A-Net In** on the A-16D Pro A-Net Distributor.



Connect **A-Net Out** to **A-Net In** to expand a network.

All network slots (up to 64) are available at each of the A-Net Distributor's outputs. Connect Personal Mixers as needed. The legacy A-16II and A-16R Personal Mixers will use network slots 1-16 only and will ignore slots 17-64. A320 Personal Mixers will use slots 1-32 of the network, ignoring slots 33-64. The A-Net Offset Base Slot DIP switches can be used to select specific content ranges to be used by A320 and/or A-16II Personal Mixers.

A640 and A360 Personal Mixers can make use of any active slot. Any A640 or A360 Personal Mixers connected to a D400 or A-16D Pro cannot use the Network Mix Back feature; which requires the D800 A-Net Distributor.

Expand the system further with another A-16D Pro by connecting **A-Net Thru** on the first A-16D Pro to **A-Net In** on the second.

---

✓ **NOTE:** The half-rackspace A-16D A-Net Distributor may be substituted for the A-16D Pro.

---

## D400 and D400-Dante A-Net Distributor Specifications

### Common Specifications

<b>A-Net Out to Personal Mixers</b>	Eight RJ45 connectors, powered
<b>A-Net Out</b>	Pro16e A-Net; RJ45 connector, unpowered
<b>LEDs</b>	Power On (red); Network Sync (green)
<b>Stereo Link</b>	Two 8-position DIP switch blocks (1-16, 17-32)
<b>A-Net Cables</b>	Personal Mixer Connections: Shielded Cat-5e (or better) cable must be used to stay below the CISPR 22 Class B, ICES-003, and FCC 47 CFR Part 15 Class B emissions limits.  Unshielded Cat-5e cable may be used on all other connections.
<b>Output Voltage for Personal Mixers</b>	24VDC, 0.5 amp Transmitted over the Cat-5e cable
<b>Power Supply</b>	Internal, IEC connector
<b>Input Voltage</b>	100-120 VAC or 200-240 VAC (with selector switch); 50-60Hz @220 W max
<b>AC Fuse Types</b>	115V range: T2.5AL/250V 230V range: T1.25AL/250V
<b>Dimensions</b>	19" (482.6 mm) wide x 7.386" (187.6 mm) deep; 2U, 3.5" (88.9 mm) high
<b>Weight</b>	12.0 lbs (5.44 kg)

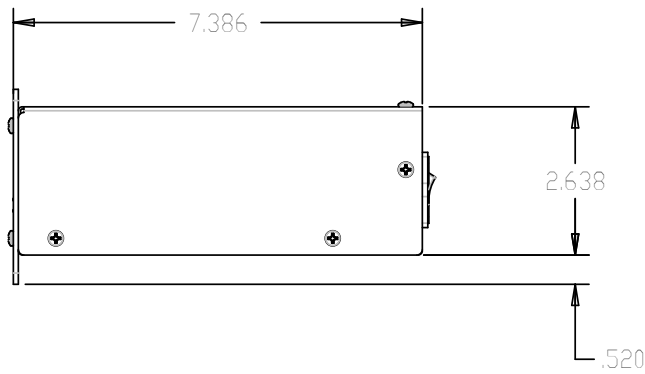
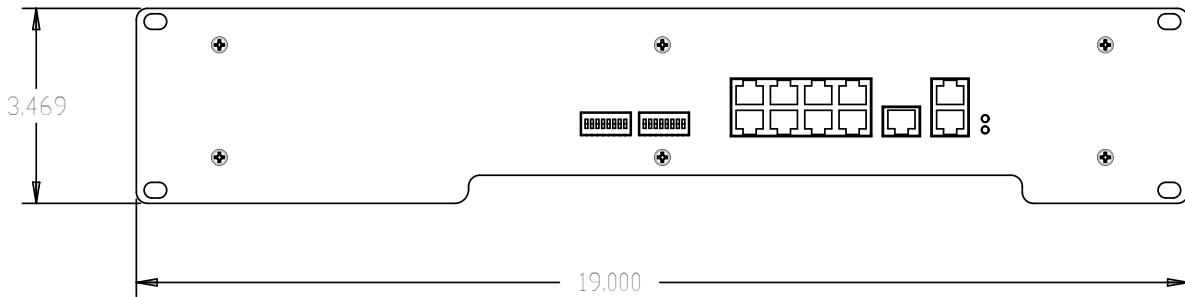
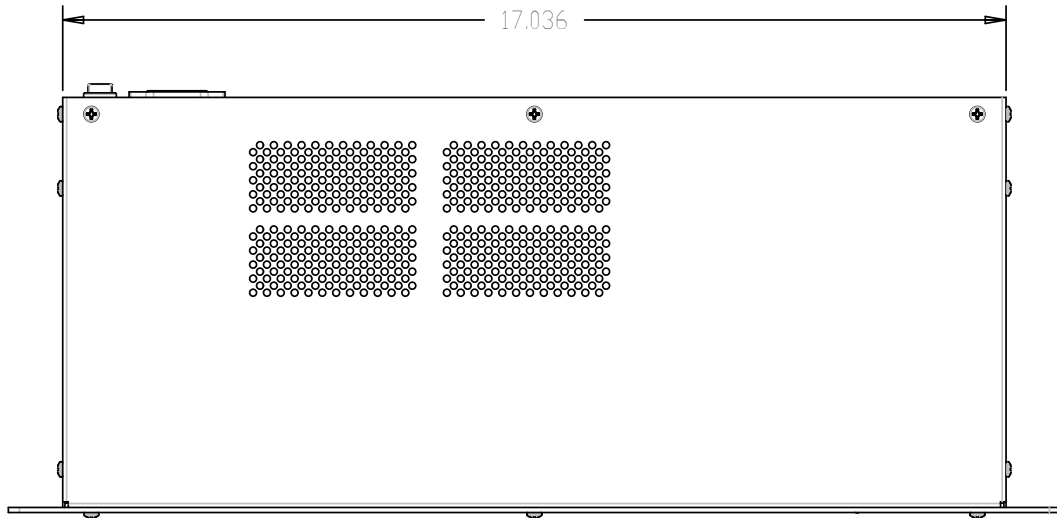
## D400 A-Net Distributor Specifications

<b>A-Net Input</b>	Pro16 or Pro16e A-Net; RJ45 connector
<b>A-Net Offset Base Slot</b>	2-position DIP switches select the starting channel that Personal Mixers will receive from the network (1, 17, 33, or 49)
<b>Defeat Stereo Switches</b>	Chooses between local (front panel) stereo links (up) or network stereo links (down)

## D400-Dante A-Net Distributor Specifications

<b>Dante Interface</b>	32 channels (44.1/48kHz Sample Rate)
<b>Dante Primary I/O</b>	RJ45 connector
<b>Dante Secondary I/O</b>	RJ45 connector
<b>Dante LEDs</b>	Network Activity (green); 1GB Network Connection Active (yellow)









# Dimensions











## Cat-5 Cable Pinout

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

### T568A

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

### T568B

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



---

# Index

## Symbols

---

16-Channel Personal Mixing System 30  
32-Channel Personal Mixing System 32  
64-Channel Personal Mixing System 33  
115V operation 22  
230V operation 22

## A

---

A-16D A-Net Distributor 2, 36  
A-16D Pro A-Net Distributor 2, 4, 13, 36  
A-16II Personal Mixer 4, 12, 13, 29, 36  
A-16R Personal Mixer 4, 36  
A320 Personal Mixer 2, 8, 12, 29, 32, 33, 36  
A360 Channel Manager 12, 29  
A360 Personal Mixer 2, 3, 8, 12, 8, 29, 32, 33  
A640 Personal Mixer 3, 8, 12, 14, 32, 36  
AC Line Conditioning 7  
AN-16/i Input Module 4, 33  
AN-16/i-M Mic Input Module 4, 6, 11, 33  
AN-16/i v.2 Input Module 4, 6, 11, 30, 32  
AN-16/o v.4 Output Module 4, 6  
Analog Input 30, 33  
A-Net 3  
A-Net Distributor 2, 4, 29  
A-Net In 4, 9, 11, 20, 30, 31, 32  
A-Net In port 6, 11, 29, 36  
A-Net Input 38  
A-Net Offset Base Slot 9, 13, 16, 19, 30, 31, 38  
A-Net Out 9, 10, 11, 30, 31, 32, 37  
A-Net Out port 6, 11, 13, 36  
A-Net Ports 12  
A-Net Thru 36  
Apple iv  
Audinate 12, 23, 28  
Aviom16/o-Y1 A-Net Card 4  
AV-M8 Mic Input Module 4

## B

---

Base Slot 9, 13, 16, 30, 31, 38  
bypass stereo links 14

## C

---

Cable Length 6, 35  
    Pro16e 6  
Cables 5  
Cat-5 5  
    shielded 37  
Cat-5 Cable Pinout 5, 40  
Cat-5e 29, 30  
    5  
    shielded 5  
    UTP 5  
Cat-5e cable  
    solid v. stranded 6  
Cat-6 2, 5  
Cat-6e 5  
Certifications iv  
change the sample rate 27  
Channel assignment 19  
Channel Map 31  
    A360 12, 32  
Channel Offset 16  
channel pair 31  
Channel routing 23  
Cleaning and Maintenance 7  
clock 20  
Clock Status 24  
Compatibility 4, 6, 30  
configuration preset 24  
Connecting Personal Mixers 29  
console card 4, 11, 31, 32, 33, 36  
crossover cables 5

## D

---

D400-Dante Front Panel 10  
D400 Front Panel 9  
D800 A-Net Distributor 2, 3, 13, 36  
D800-Dante A-Net Distributor 4  
daisy chain 12  
daisy chain Dante 28  
Dante 8  
Dante Controller 3, 12, 23, 24, 28, 34  
Dante LEDs 38  
Dante Primary 10, 11, 34, 38

- Dante routing 24
- Dante Secondary 10, 12, 34, 38
- Dante Setup 23
- DC power 8, 9, 10, 12, 29
- Default 16
- default setting 30
- Defeat Stereo Links 9, 13
- Defeat Stereo Switches 14, 16, 38
- Device Config Tab 27
- Device Latency 27
- Device View 25, 28
- digital console 24
- digital console card 11
- Dimensions 37, 39
- DIP switch 9, 10, 13, 14, 16, 30, 31
- DIP Switch Block 1 15
- DIP Switch Setting 16
- Direct Output 11

## E

---

- earth ground 22
- emissions limits 30
- Ethernet 3
- Expanding a System 13, 35

## F

---

- firmware 25, 26
- Front Panel 9, 10
- front panel Sync LED 20
- Fuse 22, 37
- Fuse holder 21

## G

---

- gigabit network 11
- gigabit switch 12, 28
- green LED 11

## I

---

- IEC 21, 22, 37
- IEC power input 21
- inline coupler 6
- Input Module 4
- Input Voltage 22, 37
- Input Voltage Selection 21

## L

---

- Latency 27
- LED 9, 10, 37
- LED Indicators 20
- Local Area Network 3

## M

---

- map channels 17
- maximum cable length 7
- Mixing System 29
- Mono 15

## N

---

- Network Config Tab 28
- Network Mix Back 36
- Network Slot 12, 19, 30
- Network View 24

## O

---

- Offset 38
- Offset Base Slot 16
- Operating Temperature iii
- Output Voltage 37

## P

---

- Package Contents 3
- patch Dante channels 27
- permanent installation 5
- Personal Mixer 29, 31, 32, 34, 36
- Personal Mixing System 29
- Pinout 5, 40
- Power connection 21
- Power LED 9, 10, 20
- Power On 37
- Power Supply 12, 29, 37
- Preferred Master 24
- preset
  - Dante 24
- Primary 10, 11
- Primary port 28, 34
- Pro16 3
- Pro16e 3
  - cable length 6
- Pro16e A-Net 8

## R

---

Rear Panel 21  
Receive 24  
red LED 20  
Redundant 12, 25, 28, 34  
RJ45 5, 37  
Routing Dante Channels 23, 24

## S

---

Sample Rate 11, 25, 27, 34, 38  
sample rate converter 11, 27  
SB4 System Bridge 4, 6, 36  
Secondary 10, 11, 12, 34  
Secondary port 28  
Shielded Cat-5e iv, 5, 30, 37  
Slot 2, 13, 30, 32, 36  
Slot Range switch 32, 33  
    AN-16/i v.2 30  
solid v. stranded Cat-5 6  
Specifications 37  
Status Tab 26  
Stereo Channel 19  
Stereo Link 9, 14, 15, 19, 31, 32, 34, 37  
    bypass 14  
Stereo Link DIP switch 10, 15, 16  
surge protection 7  
Switched 12, 28, 34  
Sync 37  
Sync LED 9, 10, 20  
    front panel 20  
System Bridge 6  
system expansion 30

## T

---

T568A pinout 40  
T568B pinout 40  
Thru 36  
Trademarks iv  
Transmit 24

## U

---

Unshielded Cat-5e 5, 30, 37  
UPS 7

## V

---

Voltage 22, 37  
Voltage Selection 21

## W

---

Warranty Registration 3

## Y

---

Y1 A-Net Card for Yamaha 4, 31  
Yamaha 31  
Yamaha console 24  
yellow LED 11

## Z

---

zone 17

## Warranty Registration

---

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

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

Model _____	Product Serial Number _____
Model _____	Product Serial Number _____
Model _____	Product Serial Number _____
Model _____	Product Serial Number _____

Date Purchased \_\_\_\_\_  
Dealer Name \_\_\_\_\_  
Dealer Location \_\_\_\_\_  
\_\_\_\_\_

Your Name \_\_\_\_\_  
Address \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State/Province \_\_\_\_\_  
Zip/Postal Code \_\_\_\_\_  
Country \_\_\_\_\_  
  
Email Address \_\_\_\_\_

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

**AVIOM<sup>®</sup>**

1157 Phoenixville Pike, Suite 201 • West Chester, PA 19380 USA  
Voice: +1 610.738.9005 • Fax: +1 610.738.9950 • [www.Aviom.com](http://www.Aviom.com)