



SONIFEX AVN-DIO14 Dante to XLR Analogue Stereo Input and Output User Manual

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Registration & Warranty

This handbook is for use with the following products:

AVN-DIO14 Dante® to XLR Analogue Stereo Input & Output

Artwork: AW11067 Stock Code: 30-392

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Made in the UK by **Sonifex**

www.sonifex.co.uk/register

Register Online for an Extended 2 Year Warranty

Product Warranty – 2 Year Extended As standard, Sonifex products are supplied with a 1 year back to base warranty. In order to register the date of purchase and so that we can keep you informed of any product design improvements or modifications, it is important to complete the warranty registration online. Additionally, if you

register the product on the Sonifex website, you can increase your product warranty to 2 years. Go to the Sonifex website at: www.sonifex.co.uk/register to apply for your 2 year warranty

Sonifex Warranty & Liability Terms & Conditions

Definitions

'the Company' means Sonifex Ltd and where relevant includes companies within the same group of companies as Sonifex Limited. 'the Goods' means the goods or any part thereof supplied by the Company and where relevant includes: work carried out by the Company on items supplied by the Purchaser; services supplied by the Company; and software supplied by the Company.

'the Purchaser' means the person or organization who buys or has agreed to buy the Goods.

'the Price' means the Price of the Goods and any other charges incurred by the Company in the supply of the Goods. 'the Warranty Term' is the length of the product warranty which is usually 12 months from the date of despatch; except when the product has been registered at the Sonifex website when the Warranty Term is 24 months from the date of dispatch. 'the Contract' means the quotation, these Conditions of Sale and any other document incorporated in a contract between the Company and the Purchaser. This is the entire Contract between the parties relating to the subject matter hereof and may not be changed or terminated except in writing in accordance with the provisions of this Contract. A reference to the consent, acknowledgement, authority or agreement of the Company means in writing and only by a director of the Company.

Warranty

1. The Company agrees to repair or (at its discretion) replace Goods which are found to be defective (fair wear and tear excepted) and which are returned to the Company within the Warranty Term provided that each of the following are satisfied:
 1. notification of any defect is given to the Company immediately upon its becoming apparent to the Purchaser;
 2. the Goods have only been operated under normal operating conditions and have only been subject to normal use (and in particular the Goods must have been correctly connected and must not have been subject to high voltage or to ionizing radiation and must not have been used contrary to the Company's technical recommendations);
 3. the Goods are returned to the Company's premises at the Purchaser's expense;
 4. any Goods or parts of Goods replaced shall become the property of the Company;
 5. no work whatsoever (other than normal and proper maintenance) has been carried out to the Goods or any part of the Goods without the Company's prior written consent; vi. the defect has not arisen from a design made, furnished or specified by the Purchaser;
 6. the Goods have been assembled or incorporated into other goods only in accordance with any instructions issued by the Company; viii. the defect has not arisen from a design modified by the Purchaser; ix. the defect has not arisen from an item manufactured by a person other than the Company. In respect of any item manufactured by a person other than the Company, the Purchaser shall only be entitled to the benefit of any warranty or guarantee provided by such manufacturer to the Company.
2. In respect of computer software supplied by the Company the Company does not warrant that the use of the software will be uninterrupted or error free.
3. The Company accepts liability:
 1. for death or personal injury to the extent that it results from the negligence of the Company, its employees (whilst in the course of their employment) or its agents (in the course of the agency);
 2. for any breach by the Company of any statutory undertaking as to title, quiet possession and freedom

from encumbrance.

4. Subject to conditions (a) and (c) from the time of dispatch of the Goods from the Company's premises the Purchaser shall be responsible for any defect in the Goods or loss, damage, nuisance or interference whatsoever consequential economic or otherwise or wastage of material resulting from or caused by or to the Goods. In particular the Company shall not be liable for any loss of profits or other economic losses. The Company accordingly excludes all liability for the same.
5. At the request and expense of the Purchaser the Company will test the Goods to ascertain performance levels and provide a report of the results of that test. The report will be accurate at the time of the test, to the best of the belief and knowledge of the Company, and the Company accepts no liability in respect of its accuracy beyond that set out in Condition (a).
6. Subject to Condition (e) no representation, condition, warranty or other term, express or implied (by statute or otherwise) is given by the Company that the Goods are of any particular quality or standard or will enable the Purchaser to maintain any particular performance or result, or will be suitable for any particular purpose or use under specific conditions or will provide any particular capacity, notwithstanding that the requirement for such performance, result or capacity or that such particular purpose or conditions may have been known (or ought to have been known) to the Company, its employees or agents.
7.
 1. To the extent that the Company is held legally liable to the Purchaser for any single breach of contract, tort, representation or other act or default, the Company's liability for the same shall not exceed the price of the Goods.
 2. The restriction of liability in Condition (g)(i) shall not apply to any liability accepted by the Seller in Condition (c).
8. Where the Goods are sold under a consumer transaction (as defined by the Consumer Transactions (Restrictions on Statements) Order 1976) the statutory rights of the Purchaser are not affected by these Conditions of Sale.

Unpacking Your Product

Each product is shipped in protective packaging and should be inspected for damage before use. If there is any transit damage take pictures of the product packaging and notify the carrier immediately with all the relevant details of the shipment. Packing materials should be kept for inspection and also for if the product needs to be returned. The product is shipped with the following equipment so please check to ensure that you have all of the items below. If anything is missing, please contact the supplier of your equipment immediately

Item	Quantity
Product Uni	1

Repairs & Returns

Please contact Sonifex or your supplier if you have any problems with your Sonifex product.

Email technical.support@sonifex.co.uk for the repair/ upgrade/returns procedure, or for support & questions regarding the product operation.

CE and UKCA conformity

The products in this manual comply with the essential requirements of the relevant UK and European health, safety and environmental protection legislation. The technical justification file for this product is held at Sonifex Ltd. Relevant declarations of conformity can be found at: <https://www.sonifex.co.uk/declarations>

WEEE Directive



Directive 2012/19/EU of the European Parliament and of the Council of 4th July 2012 lays down measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste from electrical and electronic equipment (WEEE). The policy of Sonifex Ltd is to comply with all applicable laws of all jurisdictions having authority over Sonifex's business, including the WEEE directive. Accordingly, Sonifex has implemented a rigorous program designed to ensure compliance of its products with the WEEE directive. The latest statements can be found at:

<https://www.sonifex.co.uk/company/recycling>

Atmosphere/Environment

This apparatus should be installed in an area that is not subject to excessive temperature variation ($<0^{\circ}\text{C}$, $>50^{\circ}\text{C}$), moisture, dust or vibration. This apparatus shall not be exposed to dripping or splashing, and no objects filled with water, such as vases shall be placed on the apparatus.

AVN-DIO14 Dante® to XLR Analogue Stereo Input & Output

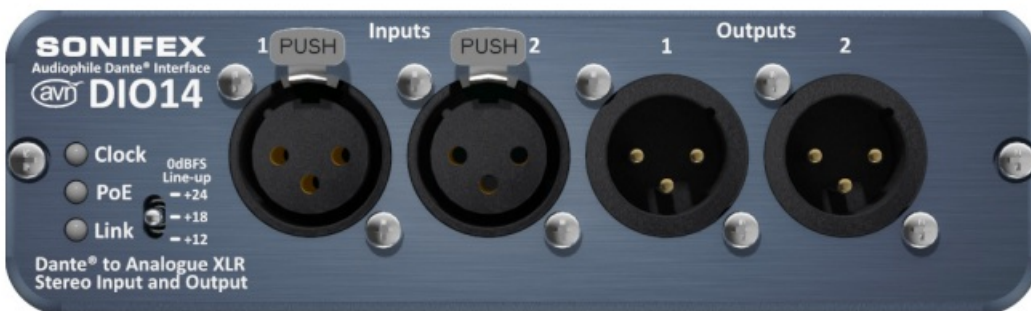


Fig 2: AVN-DIO14 Front Panel



Fig 3: AVN-DIO14 Rear Panel

The AVN-DIO14 is a Dante to XLR analogue stereo input & output convert in the Sonifex DIO range of Dante input/output devices. It features two balanced analogue XLR outputs, two balanced analogue XLR inputs and one Neutrik Ethicon connector for direct connection to a Dante AoIP network. The front panel provides a global 0dBFS line-up which can be set to +12dBu, +18dBu or +24dBu to meet your specific requirement via the front panel recessed toggle switch. There are also front panel LEDs to indicate network clock status, AoIP link status and PoE power active. It's powered using Power over Ethernet (PoE), using a Neutrik ether CON connector. The AVN-

DIO14 uses the latest Audinate Dante chipset so is AES67 and Dante Domain Manager compliant. Audinate® and Dante® are registered trademarks of Audinate Pty Ltd. Neutrik® and ether CON® are registered trademarks of Neutrik Ltd. Windows® is a registered trademark of Microsoft Corporation.

Setup

Connect the device to a PoE enabled switch using an Ethernet cable, the device will automatically turn on. If the switch does not support PoE, a PoE injector can be used to provide power. By default the Dante IP address is obtained automatically, therefore the device will automatically appear in Dante Controller. If your device does not appear in Dante Controller please see the Network Troubleshooting section of this manual. A computer on the same network can configure connections between the DIO and other Dante enabled devices, using Dante Controller.

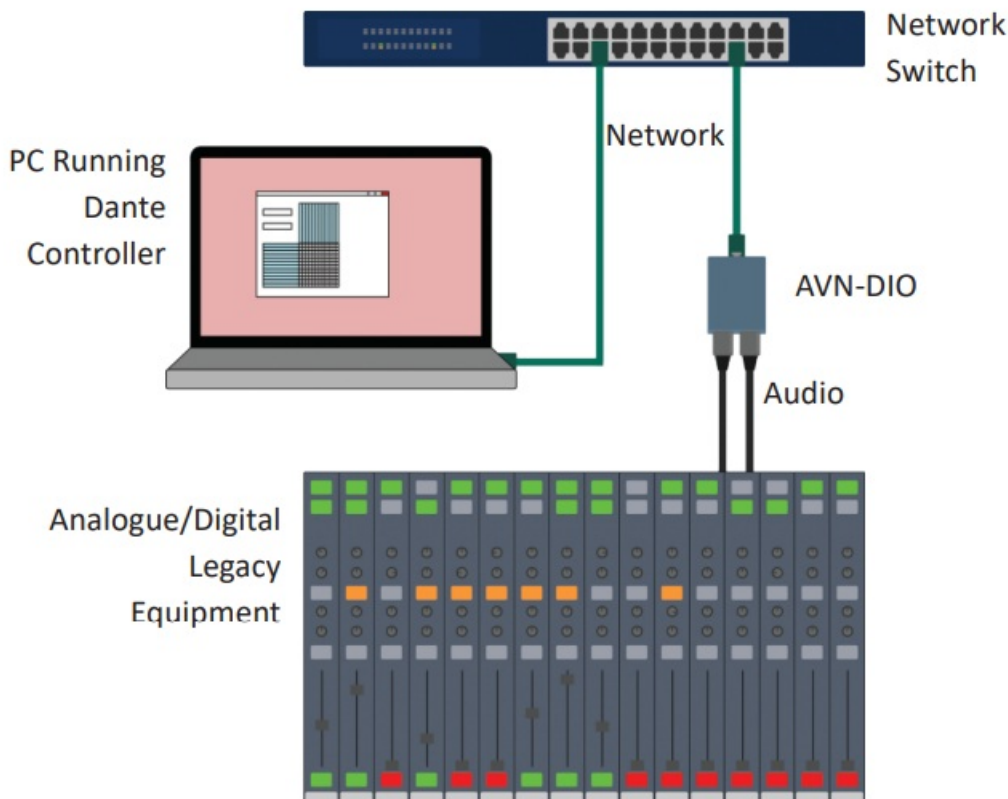


Fig 10: Typical AVN-DIO setup

Link

Link status is indicated using the top-left status LED. Once power has been supplied to the unit the link status LED turns red. The link status LED turns amber when a link is established with a link speed of 100 Mbps. Link activity is indicated using the top-right status LED which blinks when incoming or outgoing data is sensed on the port.



Fig 4: Power, Link, and Activity LEDs

Dante Controller

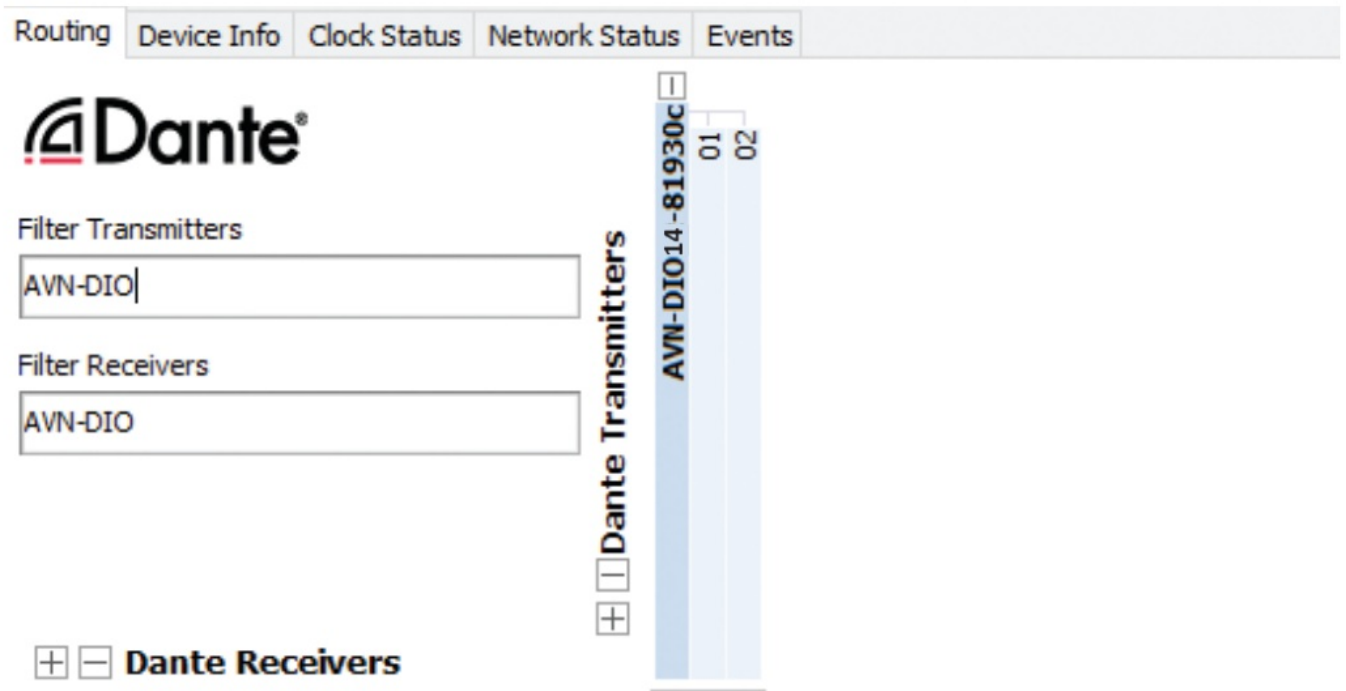


Fig 5: Dante Controller - Routing tab

Once a link has been established Dante Controller can be used to configure the device. Dante Controller is an application provided by Audinate and can be downloaded from their website. <https://www.audinate.com/> Within Dante Controller the unit should be visible within the Routing tab.

Network Troubleshooting

If the device does not show up in Dante Controller please check that the Ethernet cable is correctly connected and that the device and computer are on the same network. If the computer and the device are on different IP subnets, the device will appear in Dante Controller with red text:

Routing	Device Info	Clock Status	Network Status	Events	
Device Name	Sync	Mute	Clock Source	Domain Status	Primary Status
AVN-CU4-0006dc			Dante	N/A	Slave
Matt-PC			Dante	N/A	Slave
Recording-Studio			Dante	N/A	Master
AVN-DIO14-81930c			Dante	N/A	Slave

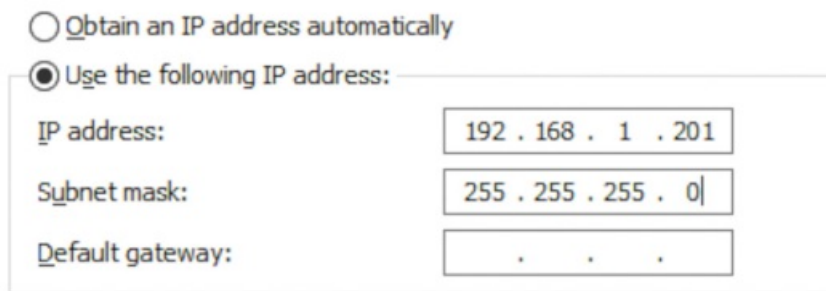
Fig 6: Red device name indicates network configuration error

Opening the Device View for the device will provide details about the problem



In this example notice the device is on the 192.168.1.X subnet and the computer is on the 10.X.X.X subnet. To access the device, edit the computer's IP address. In Windows 10, type View Network Connections into the

search bar. Right click the network that the device is connected to and select Properties. Double click Internet Protocol Version 4 (TCP/IPv4) in the item list and edit the IP address.

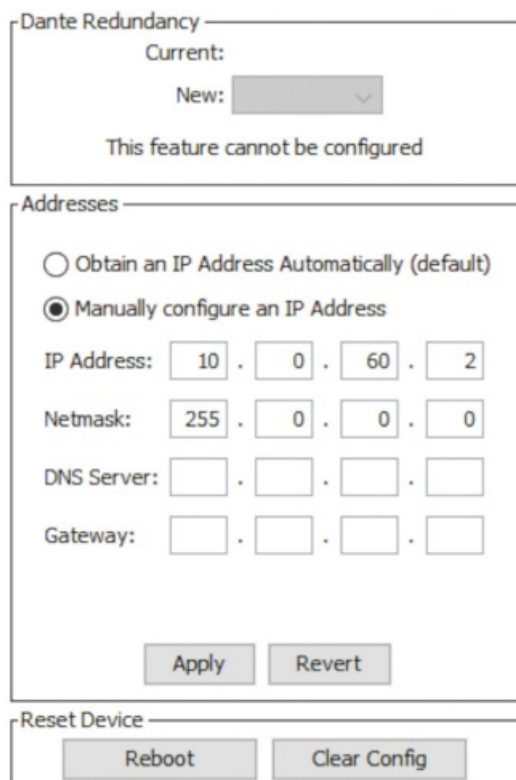


The screenshot shows the Windows network settings for IPv4. The option 'Obtain an IP address automatically' is unselected, and 'Use the following IP address:' is selected. The IP address is set to 192.168.1.201, the subnet mask is 255.255.255.0, and the default gateway is . . .

Fig 8: Windows IPv4 settings

Save the changes made to the settings then close and re-open Dante Controller. The device should now appear correctly.

Note: if your computer has multiple network interfaces on the same physical network or IP subnet this can lead to unexpected results, in this case those interfaces can be disabled. To do this in Windows 10, type View Network Connections into the search bar, right-click the network connection to disable, and select Disable. In Dante Controller the device's configuration should now be accessible. The device can now be configured and the network settings can be modified so that the device is in the correct IP subnet.



The screenshot shows the 'Dante Redundancy' and 'Addresses' sections of the Dante Controller interface. In the 'Dante Redundancy' section, 'Current:' is set to 'New:' and a message states 'This feature cannot be configured'. In the 'Addresses' section, 'Obtain an IP Address Automatically (default)' is unselected, and 'Manually configure an IP Address' is selected. The IP Address is 10.0.60.2, the Netmask is 255.0.0.0, the DNS Server is . . . , and the Gateway is At the bottom, there are 'Apply' and 'Revert' buttons. Below the 'Addresses' section is a 'Reset Device' section with 'Reboot' and 'Clear Config' buttons.

Fig 9: Dante Controller - Network Config in Device View

Open the Device View for the device and select the Network Config tab. Within this tab are options to obtain an IP address automatically, or to configure an IP address manually. After configuring the devices IP address, click the Reboot button, the device will restart and its IP address will be updated. Reconfigure the computers IP address to return to the prior IP subnet. For more troubleshooting information please see the official Dante FAQs at: <https://www.audinate.com/resources/faqs> And Dante Controller User Guide at: <https://dev.audinate.com/GA/dante-controller/userguide/pdf/latest/>

Routing Audio

Audio can be routed seamlessly between each Dante enabled device on the network by creating connections between the transmit channel of one device and the receive channel of another device. When a routing is initially created, an hour glass is displayed to show the connection is being created. After a short time a green tick is displayed to indicate the connection has been created successfully. Transmitters and receivers can also be filtered

by typing a name into the corresponding filter field. Further filtering options are available from the filter pane.

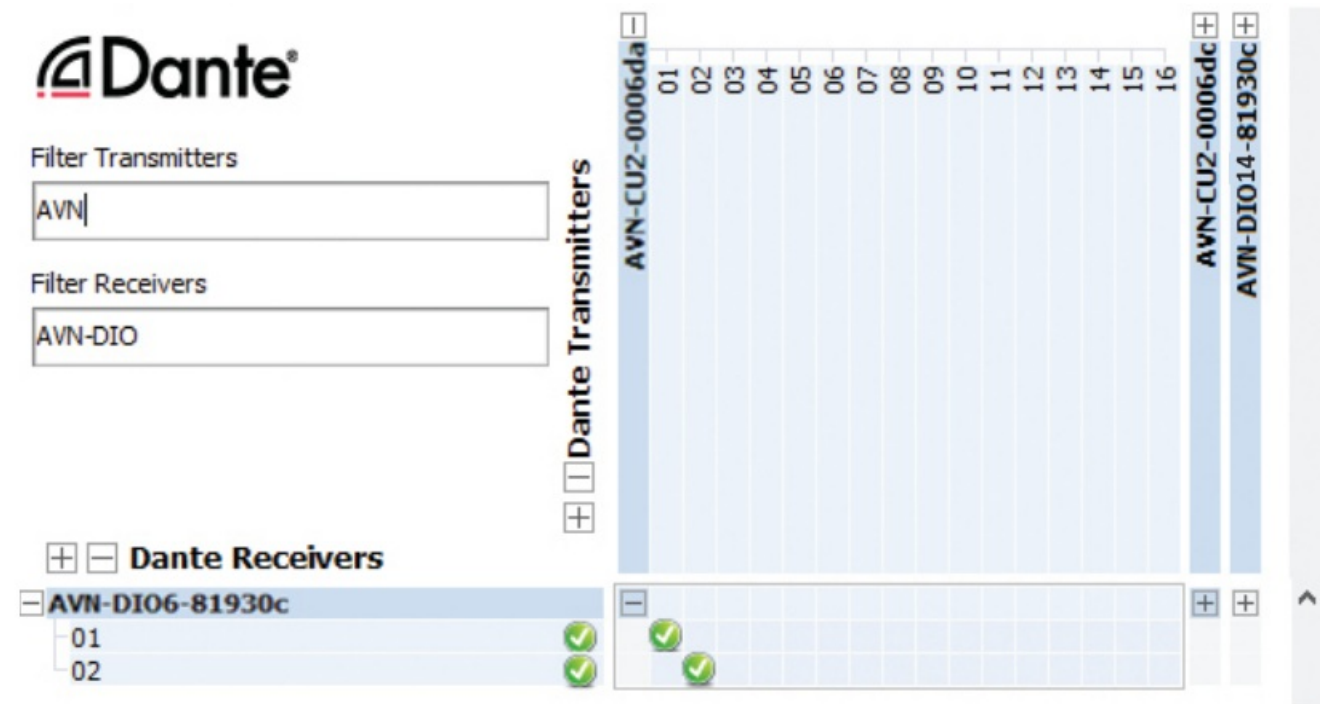


Fig 1: Routed audio stream

To remove a connection simply click on the green tick. Transmit and receive channels in a diagonal can be quickly routed together by holding the control key (Ctrl) and clicking on the minimize/maximize button on the routing grid.

Device View

Open up the Device View by double clicking on the device name in the routing grid.

Status

Within the Status tab, information about the device can be seen, such as the product type and the current IP address.

Device Information

Manufacturer: Sonifex
Product Type: AVN-DIO14
Product Version: 1.0.0
Software Version: 1.0.0
Firmware Version: 1.0.0


Dante Information

Model: UltimoX2
Dante Firmware Version: 4.1.4.2
Hardware Version: 4.1.1.1
ROM/Boot Version: 1.0.0

Clock Synchronisation

Mute Status: Unmuted
Sync Status: Locked
External Word Clock: No
Preferred: No
Frequency Offset: 11 ppm

Interfaces

P


IP Address: 10.0.2.86
MAC Address: 00:1D:C1:81:93:0C
Tx Utilisation: 1 Kbps Errors: 0
Rx Utilisation: 39 Kbps Errors: 0

Clear Counters

Fig 11: Status tab

Device Configuration

Within the Device Config tab the following can be modified.

- Device Name
- Sample Rate
- Encoding
- Clocking
- Device Latency

An option is also available to clear the configuration, resetting all settings to their default values.



Fig 1-3: AVN-DIOBT Brackets & Belt Clip



Fig 1-4: AVN-DIOMT Deskbar Fittings



Fig 1-5: AVN-DIO14 Front View Shown with AVN-DIOBT Brackets and Belt Clip



Fig 1-6: AVN-DIO14 Iso View Shown with AVN-DIOBT Brackets and Belt Clip Attached



Fig 1-7: AVN-DIO14 Iso View Shown with Deskbar Attached



Fig 1-8: AVN-DIO14 Front Iso View Shown without Accessories



Fig 1-9: AVN-DIO14 Rear Iso View Shown without Accessories

Analogue XLR Input / Output Pin-out	
Pin	Function
1	Chassis Ground
2	Phase
3	Non Phase

Line Inputs – XLR	
Input Impedance:	5kΩ balanced
0dBFS Line-Up:	Selectable +12/+18/+24dBu
Frequency Response:	20Hz to 20kHz, +0/-0.2dB (ref 1kHz)
THD+N:	<-118dBFS, -12dBu (+18dBu=0dBFS mode), 20Hz to 20kHz, 20kHz BW
Dynamic Range	<-110dB
Common Mode Rejection	>60dB @ 1kHz
Line Outputs – XLR	
Output Impedance:	
0dBFS Line-Up:	Selectable +12/+18/+24dBu
Frequency Response	20Hz to 20kHz, +0/-0.5dB (ref 1kHz)
THD+N:	<-100dBu, -30dBFS, 20Hz to 20kHz, 20kHz BW
Dynamic Range	120dB, 20kHz BW

Cross Talk	<-110dB
Network and AoIP	
AoIP Standard:	Dante
Channels:	2 transmit, 2 receive
Flows:	2 transmit 2 receive
Sample Rates:	44.1kHz, 48kHz, 88.2kHz, 96kHz
Encoding:	PCM 16, PCM 24, PCM 32
AES67 Support	Yes
Connectivity:	etherCON (RJ45 compatible)
Speed:	100Mbps
Dante Domain Manager Ready:	Yes
Clock Source:	Internal (PTP Leader) or Network PTP Leader
PoE Power	

Standard	802.3af
Class	0
PD Power Range	0.44 W to 12.94 W
Typical PSE Power Usage	6 W
Max PSE Power Usage	15.4 W
Equipment Type	
AVN-DIO14:	Dante to XLR analogue stereo input & output converter
Physical Specification	
Dimensions (Raw):	14.0cm (W) x 13.6cm (D) x 4.2cm (H) 5.5" (W) x 5.4" (D) x 1.7" (H)
Dimensions (Boxed):	17.8cm (W) x 17cm (D) x 5.6cm (H) 7.0" (W) x 6.7" (D) x 2.2" (H)
Weight	Nett: 0.42kg Gross: 0.56kg Nett: 0.95lbs Gross: 1.25lbs
Accessories	

AVN-DIOBT:	AVN-DIO Large Unit Belt Clip Kit
AVN-DIOMT	AVN-DIO Large Unit Underdeck Mount
AVN-DIORK:	AVN-DIO 1U 19" rack kit (5 x small DIO or 3 x large DIO)


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Documents / Resources

	<p>SONIFEX AVN-DIO14 Dante to XLR Analogue Stereo Input and Output [pdf] User Manual AVN-DIO14 Dante to XLR Analogue Stereo Input and Output, AVN-DIO14, Dante to XLR Analogue Stereo Input and Output, Analogue Stereo Input and Output</p>
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References

- dev.audinate.com/GA/dante-controller/userguide/pdf/latest/
- [Audinate - Maker of Dante, Pro AV's Leading Networking Technology](#)
- [Audinate Response to Dante Discovery \(mDNSResponder.exe\) Security Issue \(CVE-2022-23748\) | Audinate | FAQs](#)
- [S Welcome to Sonifex - Manufacturers of Broadcast Audio & Video Equipment for Radio & TV Studios](#)
- [S sonifex.co.uk/register](https://sonifex.co.uk/register)
- [S Welcome to Sonifex - Manufacturers of Broadcast Audio & Video Equipment for Radio & TV Studios](#)