

DOCUMENTATION

MANUAL
DANTE INTERFACE - PAN NET



Interface
for integrating Pan Acoustics loudspeakers with
AES/EBU interface into Dante networks

Read the manual carefully before using the unit.
The manual must be kept in a safe place.



All products are designed, developed and manufactured by Pan Acoustics in Germany.
Pan Acoustics reserves the right to modify products without prior notice.

www.pan-acoustics.de

General information

Manual Pan Accessories
DANTE INTERFACE - PAN NET

Language: English
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DANTE® is a registered trademark of Audinate Pty Ltd and describes a digital audio network.

This document must be kept with the product or in a safe place so that it is available when needed.

If the product is resold, the document must be handed over to the new owner in printed or electronic form.

Pan Acoustics reserves the right to change / update the document without prior notice. The latest version of this document can be downloaded from the Pan Acoustics website.

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1. Introduction

Thank you for choosing a Pan Acoustics product.

With the purchase of the DANTE INTERFACE - PAN NET, you have acquired an accessory for Pan Acoustics active loudspeakers. With this interface you can integrate loudspeakers with AES/EBU interface into an already existing Dante network. An external power supply unit is required to operate the interface. This must be purchased separately with the appropriate country specifications.

Please read these operating instructions carefully before commissioning to ensure trouble-free operation.

1.1. Symbols and explanation

- | | |
|--|--|
|  DANGER | This symbol indicates a hazard with a high level of risk. If this hazard is not prevented, severe injuries or death may result. |
|  WARNING | This symbol indicates a hazard with a moderate level of risk. If this hazard is not prevented, moderate to severe injuries or death may result. |
|  CAUTION | This symbol indicates a hazard with a moderate level of risk. Failure to observe this instruction may lead to minor injuries or property damage. |
|  NOTICE | This symbol provides important instructions for proper handling of the product. Failure to observe this instruction may lead to damage to the product or malfunctions. |

1.2. General information and target group

All information in these operating instructions is based on the product characteristics available at the time of writing and the safety regulations applicable at that time.

These operating instructions describe the setup, function and connection of the DANTE INTERFACE - PAN NET. They are intended for system technicians and persons responsible for installation and operation.

Technical specifications as well as dimensions, weight and properties do not constitute guaranteed characteristics. Pan Acoustics reserves the right to make changes and modifications within the scope of legal regulations and product improvements without notice.

These operating instructions and all other information necessary for operation must be read before use by all persons involved in the operation of the equipment. The operating instructions and other necessary information must be kept within easy reach near the unit.

The original language of all Pan Acoustics operating instructions is German.

All necessary information and documents can be obtained from the Pan Acoustics Internet Page <https://www.pan-acoustics.de/en/service/download> or by sending an e-mail to contact@pan-acoustics.de .

2. General safety regulations

The following safety regulations are to be read completely and diligently prior to installing/commissioning the device and afterwards kept in a safe place near the device. Reading the instruction manual is no substitute for knowing and following all valid local safety regulations and rules. Persons assigned to the commissioning of equipment must be properly trained. Furthermore, the assigned persons are responsible for, and are to guarantee, the safe setup and use of the equipment.

DANGER

- Power and signal lines must never be used for suspending, rigging or securing devices.
- For devices with a DC power supply, be sure to observe the proper connection (polarity).
- The rated voltages for the device must be consistent with the line voltage of the external power supply.
- The appliance complies with protection class III (safety extra-low voltage SELV). To avoid injury, ensure that all persons involved in the installation or operation of the appliance have read these operating instructions.

WARNING

To minimise the risk of damage,

- the housing must not be opened.
- the product may only be used with intact connection cables.
- the product may only be installed and secured when it is de-energised.
- the cable must not be pulled, only the plug.
- no objects may be placed on the connecting cable of the device.
- The connection cables must be installed in such a way that they are protected against damage from being walked on, pinched and tensile stress.
- the product must not be exposed to moisture or humidity (exception: versions with corresponding IP protection class).
- no objects filled with liquid (e.g. bottles) may be placed on the appliance.
- ventilation openings must not be covered with objects (e.g. textiles).
- The appliance must not be exposed to excessive heat, sunshine, fire or similar.
- must not be exposed to excessive heat no open sources of fire (e.g. candles) may be placed on or under the appliance.

To prevent injury, this product must be taken out of operation, clearly marked and secured against accidental operation if the product

- shows signs of visible damage.
- contains loose parts.
- no longer works flawlessly.
- has been stored for a long time under unfavourable conditions (e.g. in humid rooms).
- was exposed to severe transport stress (e.g. with unsuitable packaging).

To avoid damage to the device and injury,

- this product must be kept out of the reach of children.
- the product must be installed in a stable position.
- only accessories offered and approved by Pan Acoustics for the product must be used for mobile applications and fixed installations.

To avoid injuries such as hearing damage due to excessive volume levels, persons should

- never stand directly in front of a connected loudspeaker.
- not be exposed to high volume levels over a long period of time.

CAUTION

In order to prevent damage to the product, avoid

- connecting the device improperly via the RJ45 interfaces.
- connecting the product to the power supply for a prolonged period without using it.
- operating the device in environments with high air humidity.

NOTICE

Device protection and operating safety

- The device is completely disconnected from the power supply by pulling the power plug.
- The device is only to be cleaned from the outside using a dry cloth.
- The original packaging should be used when transporting the device. The device is to be protected against vibrations.

2.1. Safety instructions

All products from Pan Acoustics are developed and manufactured in Germany according to the latest safety regulations. Each product is thoroughly inspected prior to shipping according to in-house quality guidelines.

The device conforms to the current CE regulations for operation in residential, business, commercial and industrial areas.

The device is to be carefully inspected upon receipt for shipping damage and completeness. In case of damage, the forwarder and sender are to be notified without delay.

Safety may be impaired if the product:

- shows signs of visible damage.
- no longer works properly.
- has been stored under adverse conditions for a prolonged period.
- has been improperly shipped (e.g. unsuitable packaging).

If the product shows signs of impairments that no longer guarantee safe operation, the device is to be secured and labeled accordingly. It should also be ensured that no intentional or inadvertent operation by third parties is possible.

2.2. Setup location

The device must be operated in dry places guaranteeing sufficient air circulation. With an optional enclosure, the DANTE INTERFACE - PAN NET can be run in IP65 environments.

The device can be damaged due to condensation. That is why devices should be properly acclimated prior to operation.

The ambient temperature when operating the device should not exceed 40 °C and should not fall below 0 °C, except xT variant.

WARNING

When unpacking, it is important to pay attention to the temperature difference between the ambient temperature and the device. In case there is a high temperature difference, it is necessary to wait for a sufficient period before commissioning the device in order to prevent damage due to condensation.

NOTICE

If the ambient temperature is higher than 40 °C, adequate measures are to be undertaken to protect the device against overheating.

3. Scope of delivery

Description	Quantity
DANTE INTERFACE - PAN NET	1

4. Definitions

Pan Net

Audio and control signals are transmitted via the Pan Net by means of a (twisted-pair) network cable. The cable must be category CAT 5e or higher. The cabling is configured in a daisy chain.

„Pan Beam Setup“ software

Software for the setup of Pan Beam speakers

RJ45

Plug connector for transmitting signals

AES/EBU

Interface for transmission of digital audio signals between various devices according to AES3

⚠ NOTICE

AES/EBU stubs and the output on the last unit must be terminated.

Dante

Digital audio network protocol for transmission of audio and control data developed by Audinate Pty Ltd.

Dante Controller

Software for setting up and monitoring the Dante audio network

5. Product description

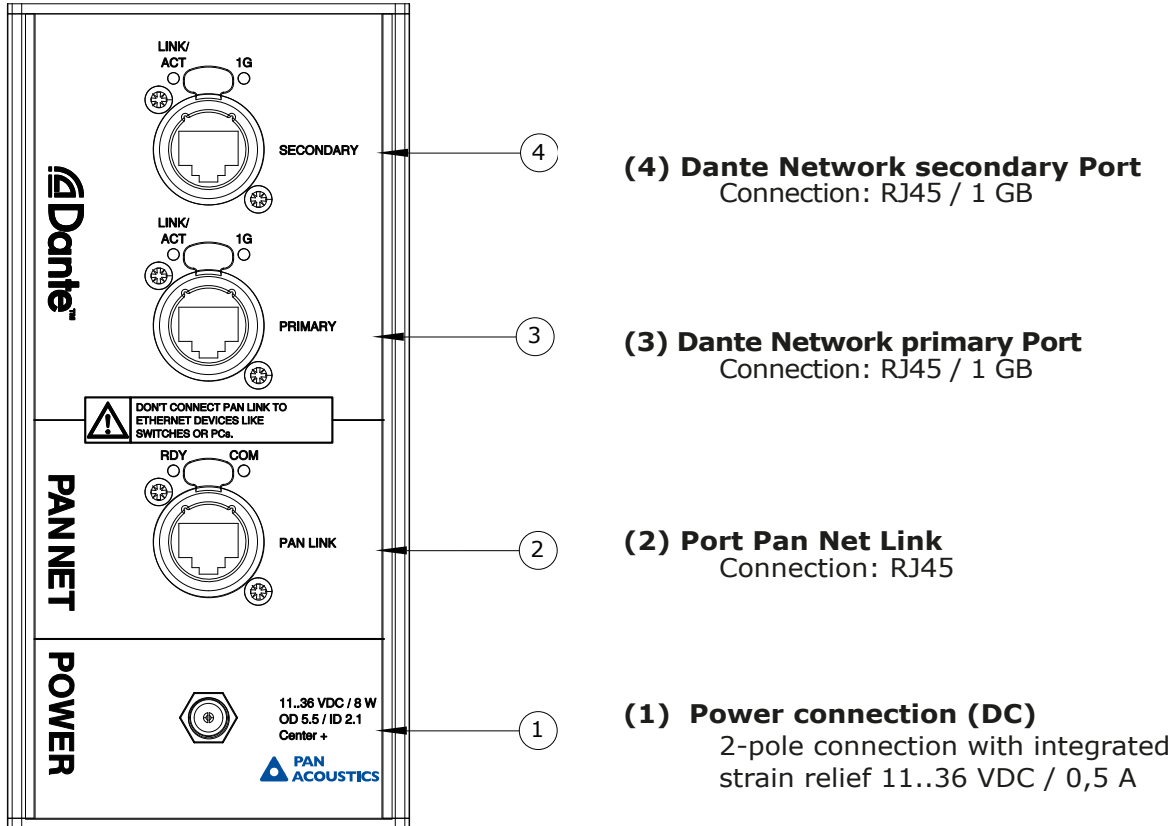
The DANTE INTERFACE - PAN NET is an audio network bridge for integrating Pan Beam speakers with an AES/EBU input into a Dante audio network. The Pan Beam speakers can be configured and monitored from a PC with installed „Pan Beam Setup“ software which is located in the same IP network. The Dante Controller software is required for setting up the interface. It can be obtained from www.audinate.com.

The Pan Net Interface consists of a high-quality aluminum enclosure, providing two Dante ports (primary and secondary), as well as a Pan Net port. Via the Dante Interface, the connected Pan Beam speakers can be supplied with two digital audio signals (AES/EBU). The DANTE INTERFACE - PAN NET can be run both in daisy chain mode as well as in redundant mode. It supports sampling rates of 44.1 to 96 kHz.

The interface is also available in a weather-protected version for top hat rail mounting.

6. Connection (overview)

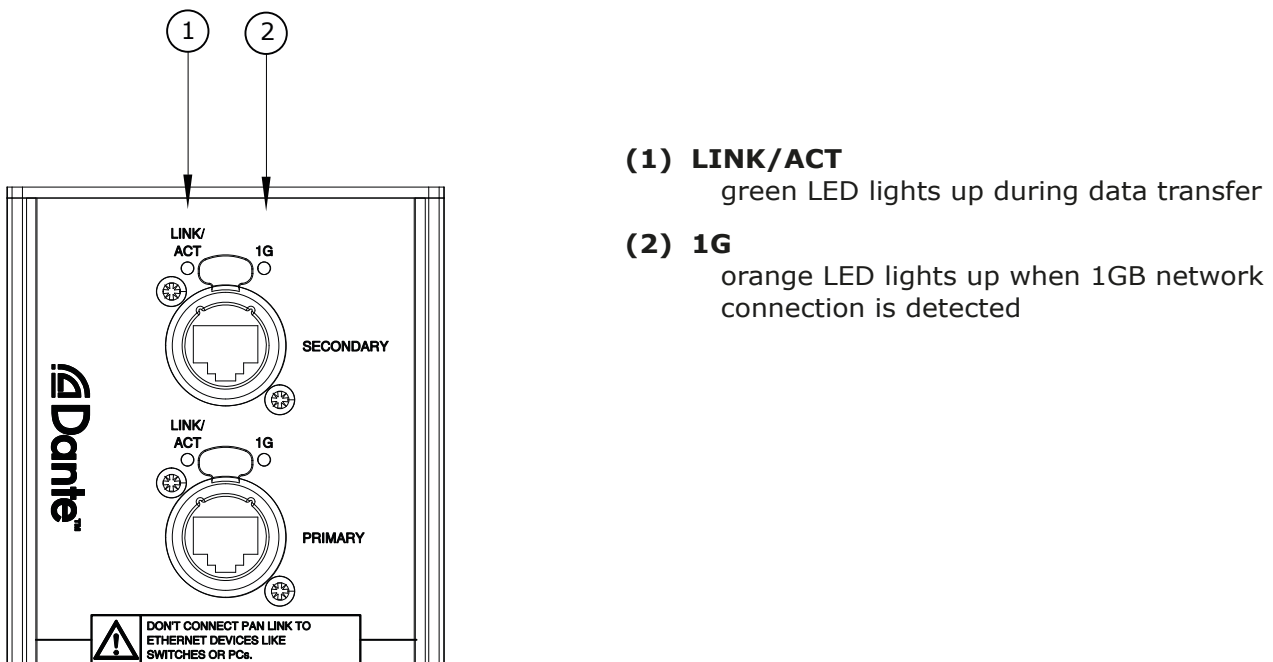
The Pan Net Dante Interface is equipped with a power connection for direct-current power supply (DC), a Pan Net Link and two Dante network (primary and secondary port) connections. Via the Pan Net Link, Pan Beam speakers with an AES/EBU audio interface can be connected, set up and monitored.



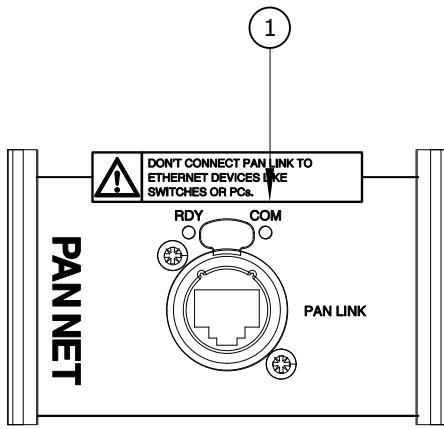
⚠ WARNING

The Pan Net Link port is not allowed to be connected to Ethernet devices such as switches, routers and network cards of PCs or laptops. Operation of these devices can lead to malfunctions and defects on these units and on the Pan Net Link port.

6.1. Dante connections

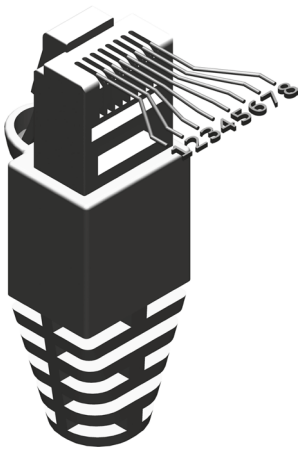


6.2. Pan Net Link connection



(1) COM
Red LED lights up during data transfer

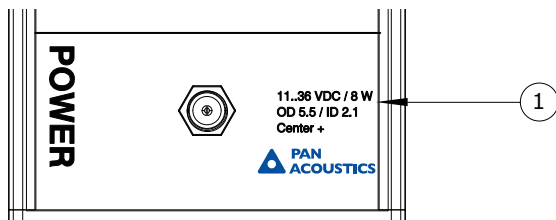
6.3. Pan Net RJ45 pinout (DANTE INTERFACE)



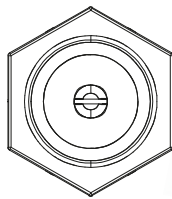
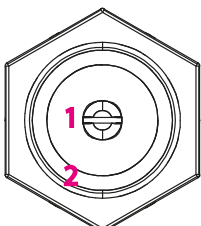
PIN	Description
1	unassigned
2	unassigned
3	unassigned
4	Input B + (AES/EBU)
5	Input B - (AES/EBU)
6	unassigned
7	RS485 +
8	RS485 -
Enclosure	PE (earth / ground) Shield

6.4. Power supply (DC connection)

The interface is to be connected to a DC power source using the enclosed connection cable. The power source must provide 11...36 VDC / 8W.



(1) DC connection
Two-pin barrel-type plug 5,5 x 2,1



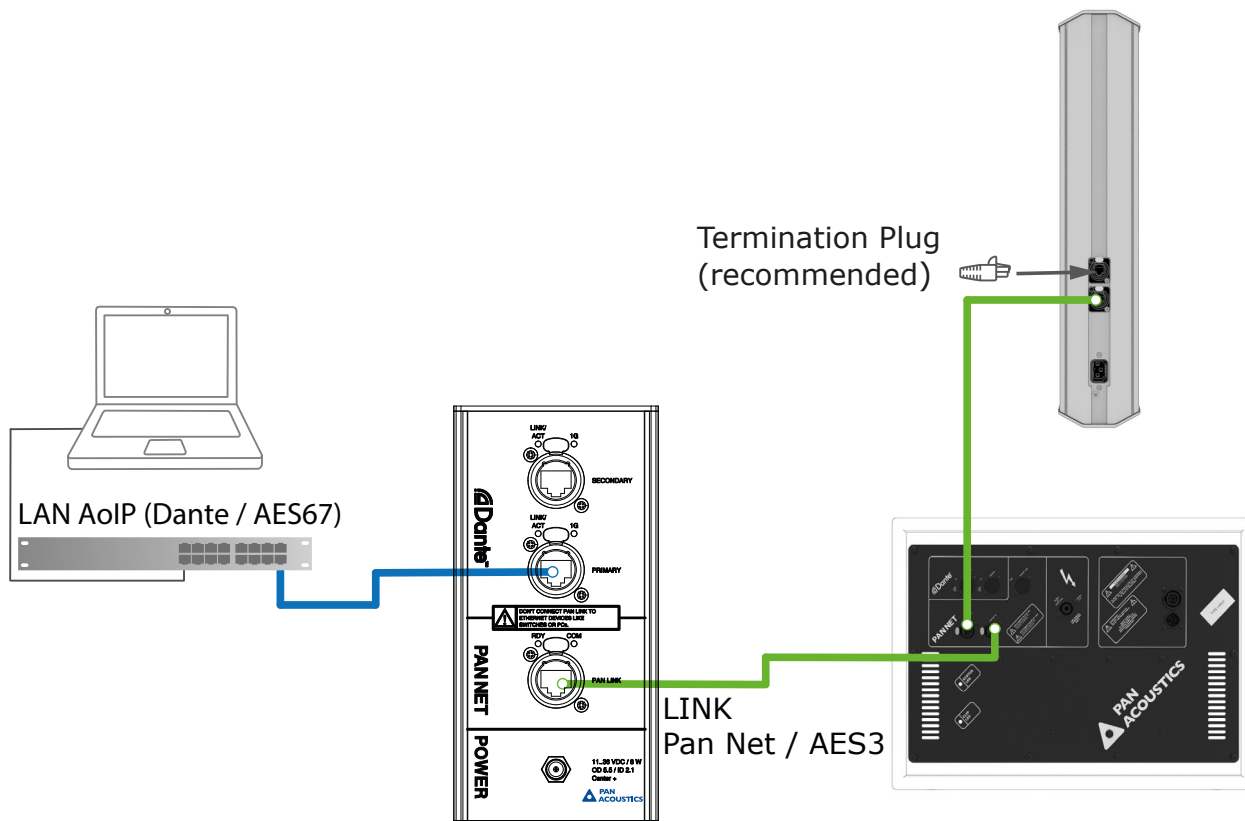
Connector pin assignment (socket/plug)

- 1) (+)
- 2) (-)

⚠ NOTICE

It is essential to ensure proper polarity of connections. Wrong polarity can lead to malfunctions or even damage the device.

6.5. Speaker connection with AES/EBU interface



The DANTE INTERFACE - PAN NET connects AES/EBU-capable speakers from the Pan Beam or Pan Subwoofer series to the DANTE network. To do this, the speakers with an AES/EBU input must be connected to the Pan Net port of the interface. The speakers with AES/EBU interface can be connected in series.

Two audio signals in AES/EBU format are available via the Pan Net link port. The corresponding speaker input can be selected via the „Pan Beam Setup“ software.

The prerequisite for this is that two audio signals are patched to the inputs of the DANTE INTERFACE - PAN NET in the DANTE controller.

⚠ NOTICE

Appropriate adapter cables are required for speakers in IP54 or IP65 design. These can be obtained ready-made from Pan Acoustics.

⚠ NOTICE

To ensure reliable and interference-free transmission of the signal data, a „termination plug“ must be installed in the output of the last speaker in the row. Depending on the speaker version, IP54 / IP65 or standard, the termination plug differs in appearance.

7. Media control

Using the Dante audio network from the manufacturer Audinate Pty Ltd, it is possible to activate presets of the speakers connected to the interface via UDP commands.

All speakers connected to the interface execute the command for switching presets if this is sent as a broadcast message via the multicast address, see chapter 8.6 „Multicast address for control data“.

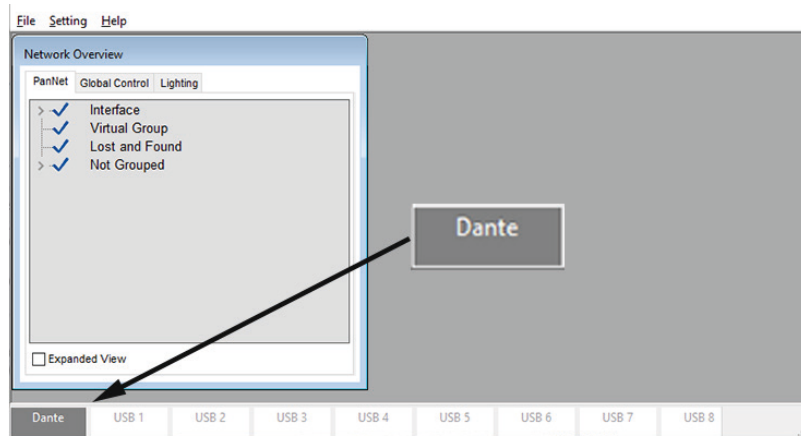
For command sets for switching presets, see the manual for the corresponding loudspeaker.

⚠ NOTICE

If there are several DANTE INTERFACE - PAN NET devices and other Pan Acoustics loudspeakers with Dante interface in the same AoIP network, all devices perform the Presets switchover when the corresponding command is sent via the multicast address.

8. Dante

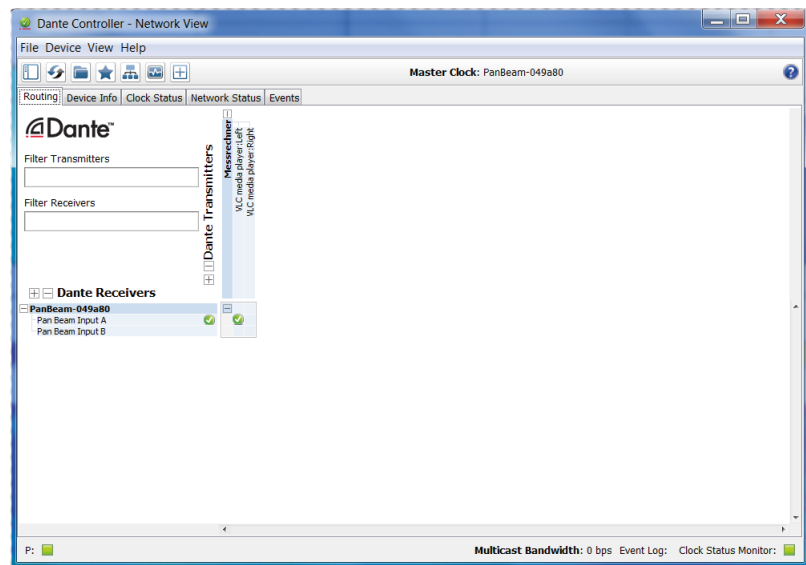
8.1. Setup



The speakers in the Pan Beam series must be set up using the „Pan Beam Setup“ software. To access a Dante network via the software, the Audinate „Dante Controller“ software must be installed. After successful installation and selection of the corresponding Ethernet interface, the „Pan Beam Setup“ software, the Dante interface (Ethernet) Dante interface (Ethernet).

The current version of the „Dante Controller“ software must be installed accordingly. Link for download: <https://www.getdante.com>

8.2. Routing



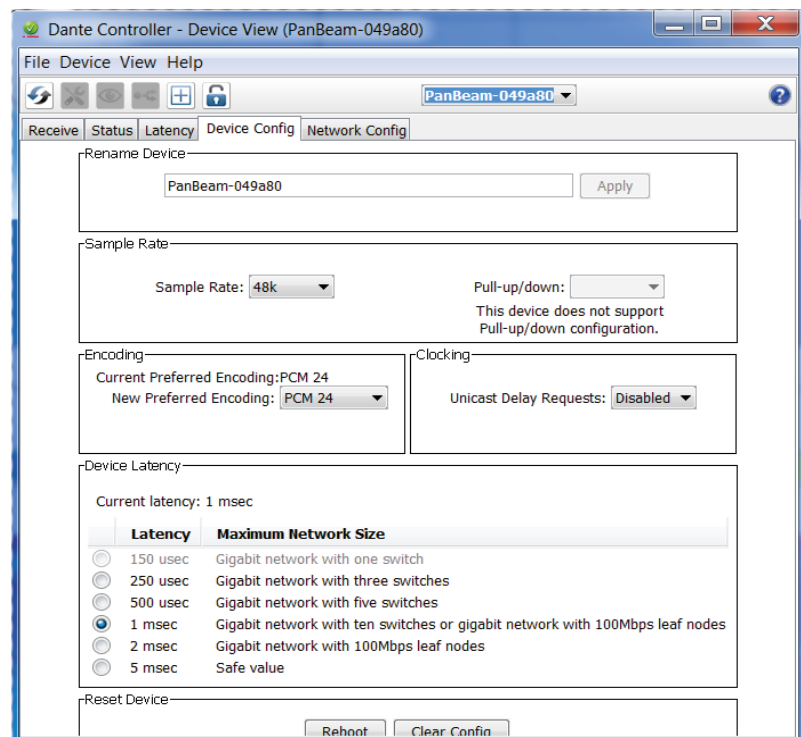
In the Dante network, a Pan Acoustics speaker appears under the “Dante Receivers” tab. The speaker features two inputs, Input A and Input B.

For audio routing, the relevant connection is to be set between the desired Dante transmitter and the Pan Beam speaker.

⚠ NOTICE

Via the “Pan Beam Setup” software, the relevant audio source of the speaker is also to be activated (Input A and / or Input B).

8.3. Device Config



The Dante interface allows to adjust various settings of the Pan Acoustics speakers via the “Device Config” tab.

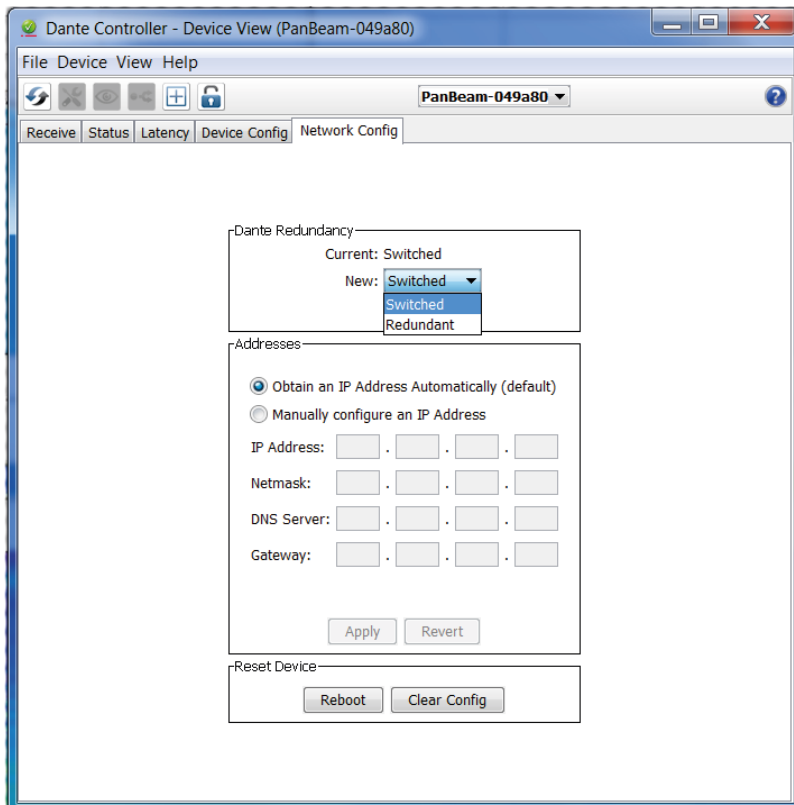
Rename device:
Assign name for the speaker

Sample rates:
44.1 kHz, 48 kHz, 96 kHz,

Encoding:
Pan Beam speakers support PCM24 and PCM32 encoding

Device latency and clocking
See Audinate Dante information at <https://www.getdante.com>

8.4. Network Config



The DANTE INTERFACE - PAN NET supports the “switched” and “redundant” modes in the Dante network.

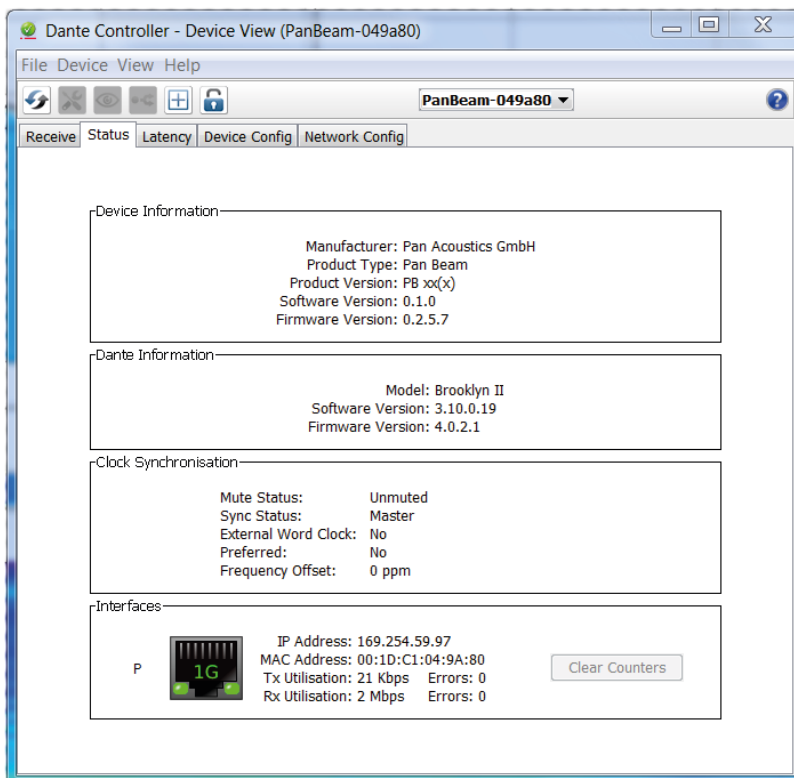
Switched:

If the DANTE INTERFACE - PAN NET is set to “switched”, an additional Dante device can be connected on the secondary port, e.g. a stage box, and operated in the Dante network.

Redundant:

If the DANTE INTERFACE - PAN NET is set to “redundant”, the Pan Beam speaker can be connected to the redundantly-configured Dante network via a second network cable.

8.5. Status



Via the “Status” tab, information can be called up on the device, firmware and software version, clock status and network interface.

8.6. Multicast address for control data

From Dante firmware version 18.64.1.0, the UDP packets required for control are sent via the multicast address: 239.0.1.4. Multicast data traffic via the address must not be blocked in the system. In earlier firmware versions, the multicast address: 224.0.1.4 is used.

The corresponding network configuration required for the AoIP network used must be carried out in accordance with its specifications. For a Dante® network, the relevant information can be obtained from the website: www.getdante.com.

Mixed operation of different firmware versions is not permitted.
A firmware update can be installed via the „Dante Controller“ software.

9. Transport and storage

The product is to be transported with care to prevent any damage that would impair its function.

The product is designed for both indoor and outdoor applications. Prolonged storage in liquids, e.g. water, is to be avoided.

10. Maintenance and care

The accessory may show signs of wear over time, e.g. due to mechanical loads, corrosion or improper handling. Therefore, for permanent installations, check at regular intervals for signs of wear and inspect the contact of the cables in the connector sockets.

When performing inspections, it is particularly important to watch out for deformations, cracks, notches, damage (on threads, cables and connectors) and corrosion. The power voltage on the power supply is also to be checked.

If the check reveals uncertainties or damaged parts, the accessories may no longer be used. The operator/user is required to be familiar with country-specific comprehensive testing regulations and to apply them.

11. Disposal

The product is to be disposed of according to existing national regulations. Please ensure that the product cannot be re-used or used for any other purpose after disposal.

12. EC conformity (CE mark)



The declaration of conformity for the relevant product from the Pan Beam series can be requested from Pan Acoustics.

13. WEEE declaration (disposal)



The waste bin symbol points out that electrical and electronic components are not allowed to be disposed of in household waste. This symbol is found on our products. If the product is to be disposed of, please consult with your dealer or distributor.

14. Contact address

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15. Technical data

For technical data of the products mentioned in this manual, see the latest data sheets of the products. These are available on the Pan Acoustics website under "Downloads".

16. Firmware updates

Firmware updates are used to maintain the software installed on the device.

Pan Acoustics has no influence on the firmware of the manufacturer Audinate for the Dante audio network. The software for these interfaces must be updated at certain intervals to ensure compatibility with other products equipped with the Dante interface; see chapter 15.1. Dante interface.

The Pan Audio DSP rarely needs a firmware update. See chapter 15.2. Pan Audio DSP.

16.1. Dante interface

It may be necessary to update the firmware of the Dante interface. The required firmware versions are available via the Dante Controller software. This software can be used to update the firmware of the interface via the network.

16.2. Pan Audio DSP

A firmware update of the Pan Audio DSP must only be carried out upon request of the Pan Beam Setup software or by the technical support of Pan Acoustics. The firmware is updated via the Pan Beam Setup software and the Pan Con interface. To do so, the interface must be connected to the Pan Net Link port.

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