



APPLICATION NOTES

DANTE SETUP AND OPERATION MODE CONFIGURATION

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All Powersoft amplifiers featuring a Dante card can be set up to send and receive audio on a Dante network. This type of connection utilises standard IP networks to transmit high-quality, uncompressed audio, with near-zero latency.

All Powersoft DSP + Dante enabled products will require two different network IP addresses; one for controlling the amplifier's DSP and one for the Dante network.

The configuration and routing of Powersoft amplifiers in a Dante network is entirely done via the software application 'Dante Controller', provided by Audinate. Free download versions of the software are available for 'Windows' and 'Mac OS X' directly on Audinate's [website](#).

The Dante modules in Powersoft amplifiers operate with their own dedicated Firmware. It is recommended that all modules in a Dante environment are always updated, i.e. running the latest firmware not just on the amplifiers, but in all the connected devices. This best practice will help to improve system performance and compatibility.

More information on how to update the Dante firmware in Powersoft amplifiers can be found on Powersoft's [website](#).

Connecting Powersoft Amplifiers to a Dante Network

Physical connection to a Dante network is done via regular Cat5e (or higher) wiring. If a switch is used, special attention should be given to its capabilities, as certain products are not compatible with Dante Networks.

For maximum reliability, network switches shall:

- be Rated for Gigabit Ethernet;
- be Non-blocking;
- have Quality of Service (QoS) with at least four queues;
- have Diffserv (DSCP) QoS with strict priority; and
- not have or have EEE (Energy efficient ethernet) switched off.

For more information on [switch requirements](#) for Dante compatibility, and on how to create and manage Dante networks, please refer to Audinate's [website](#).

When opening the 'Dante Controller', all devices connected to the Dante network will be displayed in the list of transmitters and receivers (Figure 1).



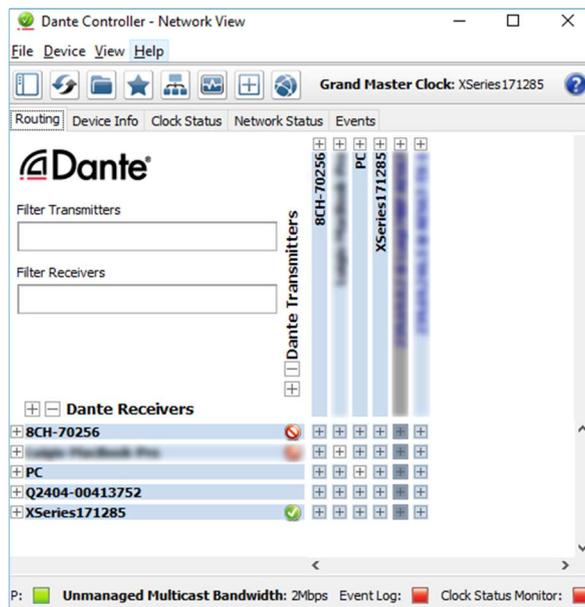


Figure 1 – Dante Controller Network View window.

If the computer in use features multiple network ports, in some instances, 'Dante Controller' may connect to the wrong one. To overcome this issue, click on the square next to 'P:' at the bottom left corner of the 'Network View' window. This will open the Dante interface configuration window (Figure 2), from where the correct port can be selected.

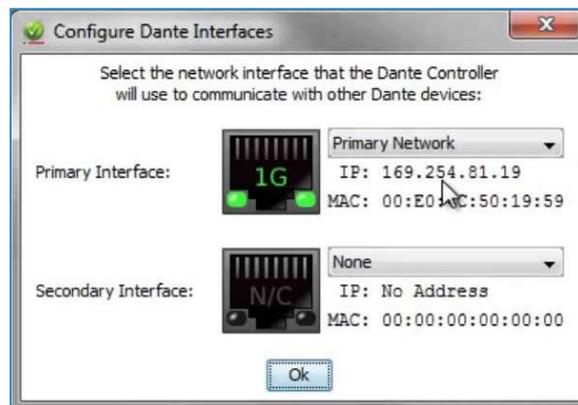


Figure 2 – Configuration of Dante interfaces.

Powersoft amplifiers connected to the Dante network will automatically obtain IP addresses by default, and in most circumstances, there is no need to change the address settings. However, static IP addresses can be assigned if necessary.

To assign a static IP address:

1. Open the 'Device View' window by double-clicking on the device to be configured.
2. Click on the 'Network Config' tab (Figure 3).
3. Under 'Addresses' switch to the option 'Manually configure an IP Address'
4. Enter the IP Address and Netmask.
5. Click 'Apply'.



The DNS Server and Gateway settings are optional – the device will use network defaults if they are not specified. To revert to the previous settings, click 'Revert'.

It is important to note that this operation requires a device reboot. This can be done by simply clicking 'Reboot' under 'Reset Device'. However, in some instances, it has been verified that a manual reboot of the amplifier is necessary for modifications to take effect and is therefore recommended as best practice.

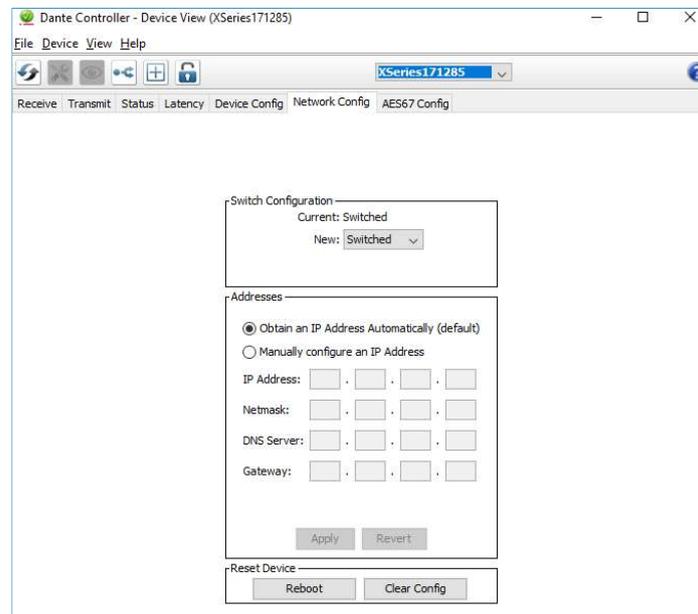


Figure 3 – Dante Controller 'Network Config' tab in the 'Device View' window.

Please note that when Powersoft amplifiers are set to automatically obtain IP addresses, Dante Controller must be running on a host computer also configured to obtain IP addresses automatically. Likewise, for static IP address configurations, fixed IP addresses must be assigned to both host computer and amplifier, with both devices operating within the same subnet.



Switched, Split and Redundant Modes

Powersoft amplifiers may feature one or two Dante ethernet ports. Amplifiers with a single Dante port also feature an additional standard Ethernet port, with each port operating independently from one another. In amplifiers where two Dante ports are available (labelled primary and secondary), it is possible to switch between different operation modes:

- **Switched Mode** – The secondary Dante port behaves as a standard switch port, allowing daisy-chaining through the amplifier (Figure 4). This is the default configuration for Powersoft amplifiers with two Dante ports.

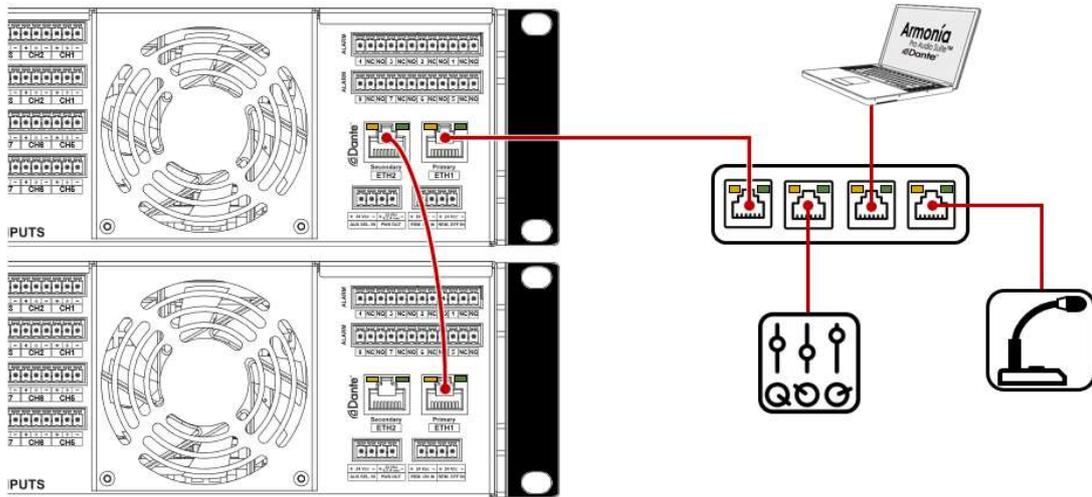


Figure 4 – Example of Dante Switched Mode configuration with Powersoft amplifiers.

- **Split Mode** – For amplifiers with a single Dante port and one Ethernet port, this is the default and only operation mode available. In amplifiers with two Dante ports, 'Split Mode' can be selected, allowing the primary port to behave as a regular Ethernet port operating independently from the Dante network (Figure 5).

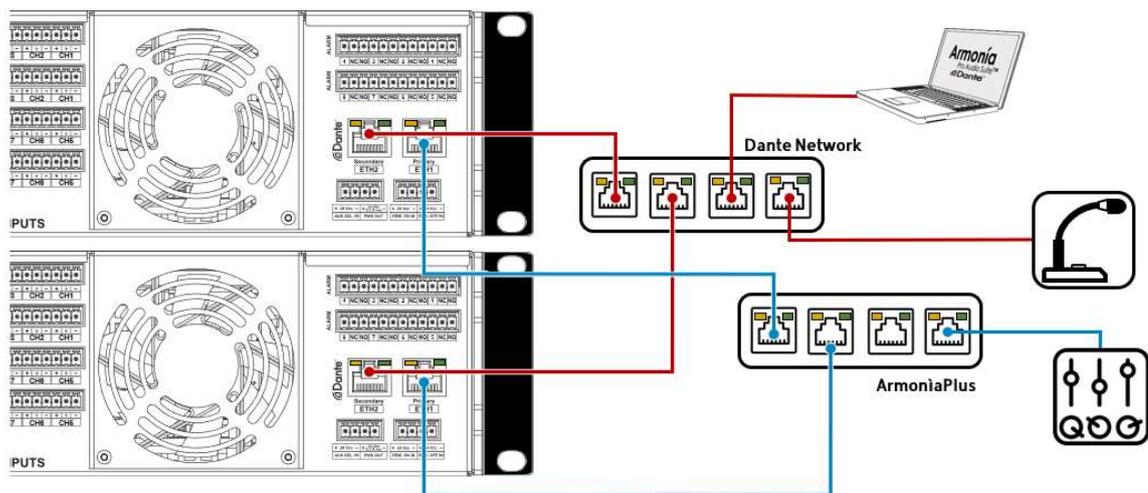


Figure 5 – Example of Dante Split Mode configuration with Powersoft amplifiers.



- **Redundant Mode** –When an amplifier is set to ‘Redundant’, it will duplicate the Dante audio traffic to both Dante ports, allowing the implementation of a redundant network via the secondary port (Figure 6).

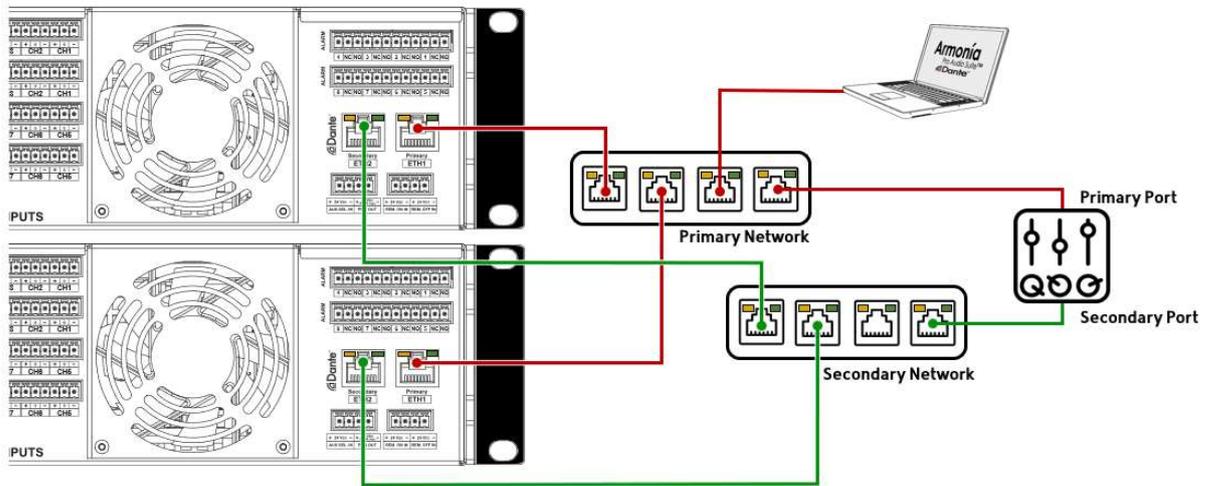


Figure 6 – Example of Dante Redundancy Mode configuration with Powersoft amplifiers.

Table 1 below provides a list of all Dante-enabled Powersoft amplifiers and their possible port configurations.

		2x Dante Ports (Switched/Split/Redundant)	1x Dante + 1x Ethernet (Split Mode only)	2x Dante Ports (Switched Mode only)
Ottocanali Series	12K4 DSP+D	✓		
	8K4 DSP+D	✓		
	4K4 DSP+D	✓		
Quattrocanali Series	4804 DSP+D		✓	
	2404 DSP+D		✓	
	1204 DSP+D		✓	
Duecanali Series	4804 DSP+D		✓	
	1604 DSP+D		✓	
	804 DSP+D		✓	
X Series	X4	✓		
	X8	✓		
T Series	302			✓
	304			✓
	602			✓
	604			✓

Table 1 – List of Dante-enabled Powersoft amplifiers.



To toggle between the different operation modes in amplifiers with two Dante ports:

1. Open the 'Device View' window by double-clicking on the device to be configured.
2. Click on the 'Network Config' tab (Figure 3).
3. Under 'Switch Configuration' select the desired operation mode from the drop-down list.

Following the above operation, a device reboot is necessary for changes to take effect.

Please take extra care when changing the amplifier's settings from split or redundant modes back to switched mode.

All Powersoft amplifiers with two Dante ports are set to operate in switched mode by default. When changing from split or redundant modes back to switched mode, two different networks may be unintentionally bridged causing problems such as uncontrolled network flooding.

Additionally, when setting up a redundant network, all equipment such as switches and cables must be duplicated. The primary and secondary networks **MUST NOT** be interconnected at any point.



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