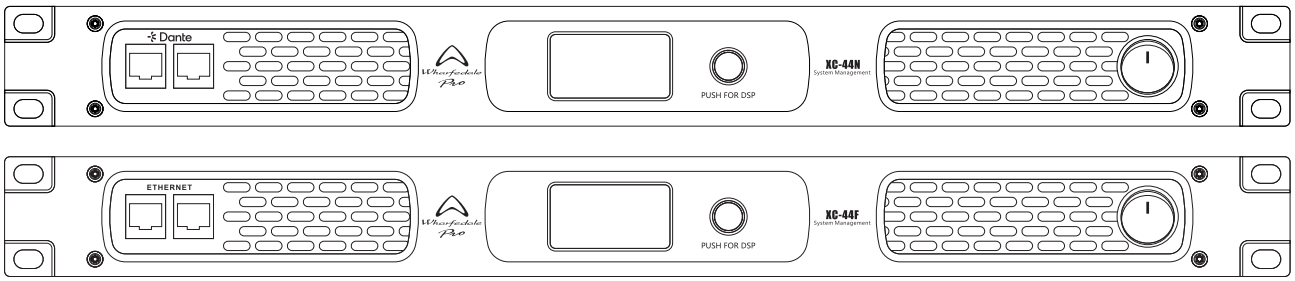
XC-44N
XC-44F

System Management Controllers



Download presets and the Controller software at www.wharfedalepro.com

Wharfedale Pro

www.wharfedalepro.com

IMPORTANT SAFETY INSTRUCTIONS

1. The equipment must only be connected to the power outlet specified in the manual. Failure to comply may result in fire or electric shock.
2. Do not place containers with liquids or small metal objects on the equipment. If liquid or metal falls into the equipment, it may cause fire or electric shock.
3. Do not place weight (including the equipment) on the power cord, otherwise it may damage the power cord, which can lead to fire or electric shock
4. Do not place the power cord in the vicinity of the heater, otherwise it may lead to melting and causing a fire.
5. Do not scratch, bend, twist, stretch or heat the power cord, as damage to the power cord can lead to fire or electric shock.
6. To pull out the power plug from the power outlet, please grasp the insulation part of the plug, do not pull the cable. Failure to do so may damage the power cord and the socket, which can lead to fire or electric shock.
7. Do not use wet hands to touch the power plug, as this can lead to electric shock.
8. Please ensure that water does not enter the equipment or expose it to damp conditions. Failure to do so may result in fire or electric shock.
9. Please do not use the equipment during the following occasions:
    - An unstable platform surface, such as a shaking table or an inclined plane.
    - A place where the air is exposed to high humidity or where dust accumulates.
    - Exposed to an overheated environment, such as a window in a closed car or in direct sunlight.
    - Exposed to splash oil foam, such as steam, stoves, boilers, humidifiers and other places.
10. There are ventilation holes at the front and behind the equipment. To avoid the impact of internal cooling, do not block the ventilation holes.
11. Please keep enough space around the equipment. Reserved space should not be less than: side 5cm, behind 10cm, and air flow unblocked.
12. If you want to move the equipment, please unplug the power plug and unplug all the connecting cables. Failure to do so may result in fire or electric shock.
13. Keep the equipment's attachments (such as machine feet, manual bags, desiccants, etc.) in a location out of reach of children.
14. Do not open the equipment cover, as this may lead to electric shock. If you think the equipment needs to be repaired or maintained, please contact the agent.
15. Do not make unauthorised modifications to the equipment. Doing so may cause malfunction, fire, or electric shock.
16. If lightning strikes, please close the power switch as soon as possible and unplug the power cord.
17. The equipment's output signal may carry high voltage, posing a risk of electric shock. Please use a dedicated connection header.
18. When connecting speakers to the system management controller output socket, only use specialised speaker cables. Using other types of cables may result in a fire hazard.
19. When connecting to the equipment, please turn off all the audio equipment and speakers.
20. Before turning on the equipment, be sure to turn the volume knob to the minimum. Otherwise, a sudden burst of sound may damage your hearing.
21. If you do not use the equipment for a long time, please unplug the power cord from the AC power outlet. Failure to do so may result in fire.
22. If the power cord is damaged (e.g., cut or with exposed wires), obtain a replacement from an authorised agent. Continuing to use the equipment may result in fire or electric shock.
23. If the equipment's casing is damaged or it has fallen from a height, immediately turn off the power switch, unplug the power cord, and contact an authorised agent. Failure to do so may result in fire or electric shock.
24. If any abnormalities occur, such as smoke or odours, immediately turn off the power switch, unplug the power cord, and contact an authorised agent. Failure to act promptly may result in fire or electric shock.
25. The machine operates using a low-voltage control for the high-voltage power switch. When the switch is turned off, the machine is not completely disconnected from the power grid. To fully disconnect it from the power grid, the power plug must be unplugged. The machine is Class I equipment, and the ground wire must be securely connected to a power outlet with protective grounding.

1 - Welcome

Thank you for trusting us by purchasing our system management controller. Our highly skilled R&D team, experienced production team, and dedicated technical support team ensure that our products perform reliably and stably in various environments, providing you with an excellent user experience. To maximize the efficiency of the equipment and bring you the best experience, please read this manual carefully.

1.1 Summary

The XC-44 series audio processors use high-performance DSP processing for advanced audio control. The main difference between the models is:

- XC-44N: Supports Dante ® network audio input and output, AES/EBU digital audio input, and a built-in gigabit switch that supports UDP protocol for debugging and monitoring via a single network cable.
- XC-44F: Supports AES/EBU digital audio input, Ethernet-based network audio and supports UDP protocol for configuration and monitoring.

1.2 Features

a) High-performance 4 in – 4 out DSP control
b) Compatibility with Wharfedale Pro DP-F and DP-N amplifier platforms
c) Gigabit Dante ® network audio, 4-channel input and 4-channel output (XC-44N only)
d) Supports 2 channels AES/EBU digital audio signal input
e) Locking XLR input connectors
f) A single network cable enables monitoring (XC-44F only)
g) 1.9-inch colour LCD display screen
h) 100 VAC - 240 VAC wide voltage range

1.3 DSP function

a) Dante ® digital audio / analogue audio can be switched automatically and backed up to each other (XC-44N only)
b) Digital / analogue audio delay and level matching
c) Input and output -54 dB to +18 dB volume adjustment
d) 4 x 4 audio routing and mixing matrix
e) 8-segment input parameter EQ, 8-segment output parameter EQ, high-low pass filter
f) Support FIR filters of 512 taps and below
g) Volume, Mute, Polarity adjustment, Mode selection
h) Output average, peak voltage limiter
i) Parameter saving / restore between machines
j) User / debugging / factory permission setting.

1.4 How to use this manual

This manual provides the basic information for the proper installation and use of the equipment and does not cover all the conditions that may arise in the actual project. For more information, please visit our website or contact our technical support, system installation personnel or agents. Please take care of the sales order or invoice for your purchase of this equipment. You need to show the credentials when the product is guaranteed.

1.5 Warning symbol

	Important operation or special note
	Risk of electrical shock

2 - Installation

2.1 Check out of the box

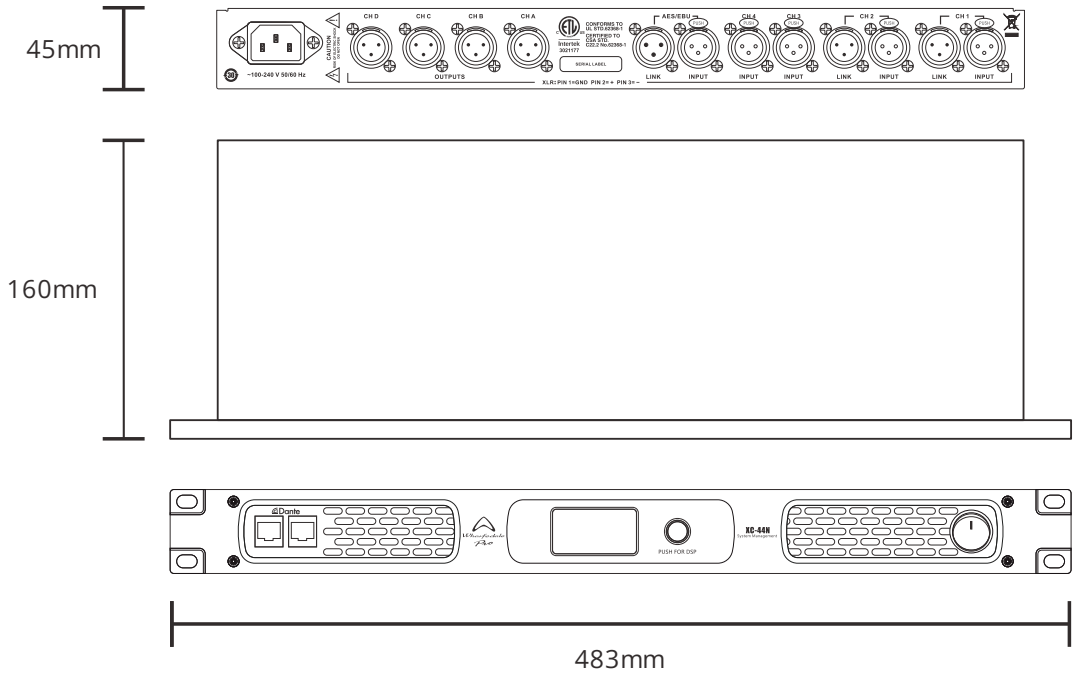
When opening the packaging, check the equipment for any transportation damage. If any damage is found, inform the supplier immediately, as only you have the right to request compensation for shipping-related damage. Retain the packaging as evidence for the shipping inspection.

It is recommended to keep all packaging materials for future transportation of the equipment. Avoid transporting the equipment without an outer package to prevent potential damage.

Packing List

Audio Processor	1 pc	User Manual	1 pc
Power cord	1 pc	Processor feet	4 pcs

2.2 Outline dimensions

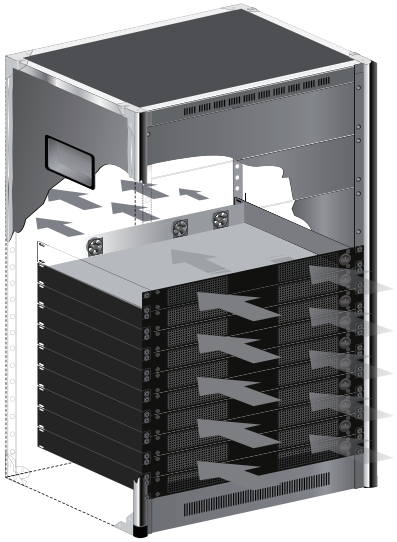


2.3 Installation preparation

	Warning: Before installation, please confirm that you see and read the safety warning.
	Before installation make sure that the power cord is not connected to the power outlet. The power switch is turned off. The volume knob is completely closed (counterclockwise to the limit).
	The equipment operates at high power and generates a strong magnetic field. To avoid potential noise, keep signal-sensitive equipment at a safe distance.

For normal operation, the following parts are needed:
1. Input connection cable
2. Output connection cable
3. Ethernet cable (for Ethernet interface audio processor)
4. Network router (for Ethernet interface audio processor)
5. Cabinets or equipment mounting rack

2.4 Cooling instructions



Cold air is drawn in through the ventilation holes on the front panel, and heat is expelled through the rear panel. To ensure effective heat dissipation, place the equipment in an environment between 0°C and 40°C and ensure that the airways on the front and rear panels remain unobstructed.

If the internal temperature exceeds 85°C, the output voltage will be reduced to prevent overheating. If the temperature continues to rise and reaches 90°C, the system management controller will shut down. The equipment will automatically restart once the temperature returns to a safe level.

After prolonged use, if cooling efficiency decreases, turn off the equipment, remove the dust net cover, and clean out any accumulated dust.

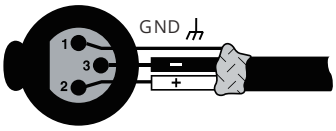
2.5 Power cord

	The grounding end of the power cord must be grounded, otherwise there is a risk of electric shock!

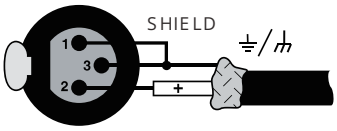
The power cord must have sufficient current capacity, AC power supply voltage and frequency must be in range of +10% of the nominal value.

2.6 Input / output line

- Use shielded cables. The higher density shielding layer is better.
- Select balanced connections for inputs to reduce any noise interference.
- If using unbalanced connections, the shorter is better. Preferably not more than 3m.
- Avoid putting a weak input signal line near the power line otherwise it might produce noise.
- Before changing any connections, ALWAYS turn off all equipment. Otherwise, it may cause damage to hearing and loudspeakers.



Balanced analog input

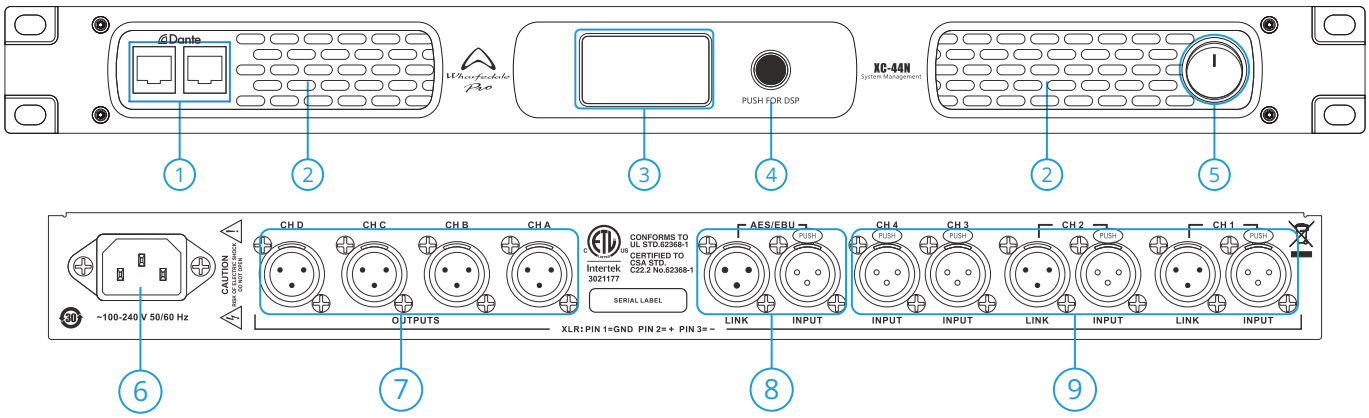


Non balanced analog input connection

3 - Operating instructions

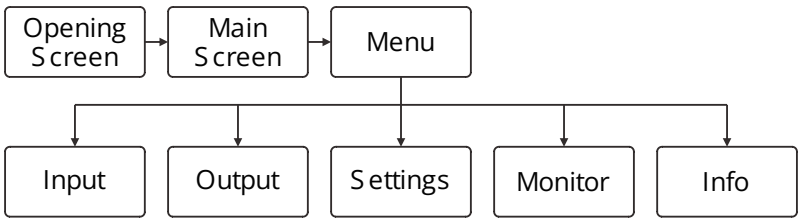
⚠	Before installation, ensure the power cord is not connected to the power outlet. Ensure that the power switch is turned off, and that the volume knob is fully turned down (rotated counterclockwise to its limit).

3.1 Operation



1. Ethernet interface: dual RJ45 network interface, built-in switch and support for the UDP protocol.
2. Cooling Vents: Front-to-rear forced airflow through foam dust filters.
3. LCD Display Screen.
4. Control Button: turn for previous and next, push for enter.
5. Power Switch: ON/OFF. To turn it ON, press the “I” side down.
6. Power input cable: IEC power socket.
7. Signal output: balanced three-core XLR output plug.
8. AES/EBU input: shielded ground, three-core XLR input plug. Use 110 ohm cable.
9. Balanced Analogue XLR Inputs: 3-pin socket XLR connector for each channel.

4 - Display screen and Menu Structure



Opening Screen	Turn on the power and the LCD screen will display the logo. After a few seconds, it will automatically load up to the main page.
Main Screen	This page allows control of volume and mute functions. It displays the volume, output level, output clipping and output compression for each channel. It also shows the operating temperature of the equipment, the network connection status and the current scene mode. Press the rotary encoder to access the operation menu.

Menu

1. Input Menu

Source Volume Delay Xover EQ Matrix Back	This page controls the functions and parameters of the DSP's input section, including the source settings, volume control, input delay, crossover, input EQ, source routing, and mixing. Press the rotary encoder to access the operation menu and press "Return" to exit the menu.

2. Output Menu

FIR Xover EQ Volume Delay Polarity Limiters Preset Dante ® Out (XC-44N only) Back	This page controls the functions and parameters of the DSP's output section, including FIR data import, crossover, output EQ, output volume, output delay, polarity, voltage limiter switch, preset recall, and Dante ® output selection. Press the rotary encoder to access the operation menu and press "Return" to exit the menu.

3. Settings

Standby：Normal/Standby Backlight：Always/Saving/OFF Dante ® IP：192.168.0.72 MAC：00-1D-C1-93-CF-9D Multicast Factory Reset Back	Choose whether to standby, Normal: normal work. Screen contrast, range 30-100, default 75. -Sheldon: The screen is Always backlit. Saving: close after 2 minutes; OFF: Always off. Dante ® IP address, assigned by the Dante ® network. Dante ® MAC address, assigned by the Dante ® network. factory data reset.

4. Monitor

V I TEMP State	Output voltage of each channel of system management controller. Output current of each channel of system management controller. Operating temperature of each channel and power module of system management controller. Whether all channels of system management controller are protected.

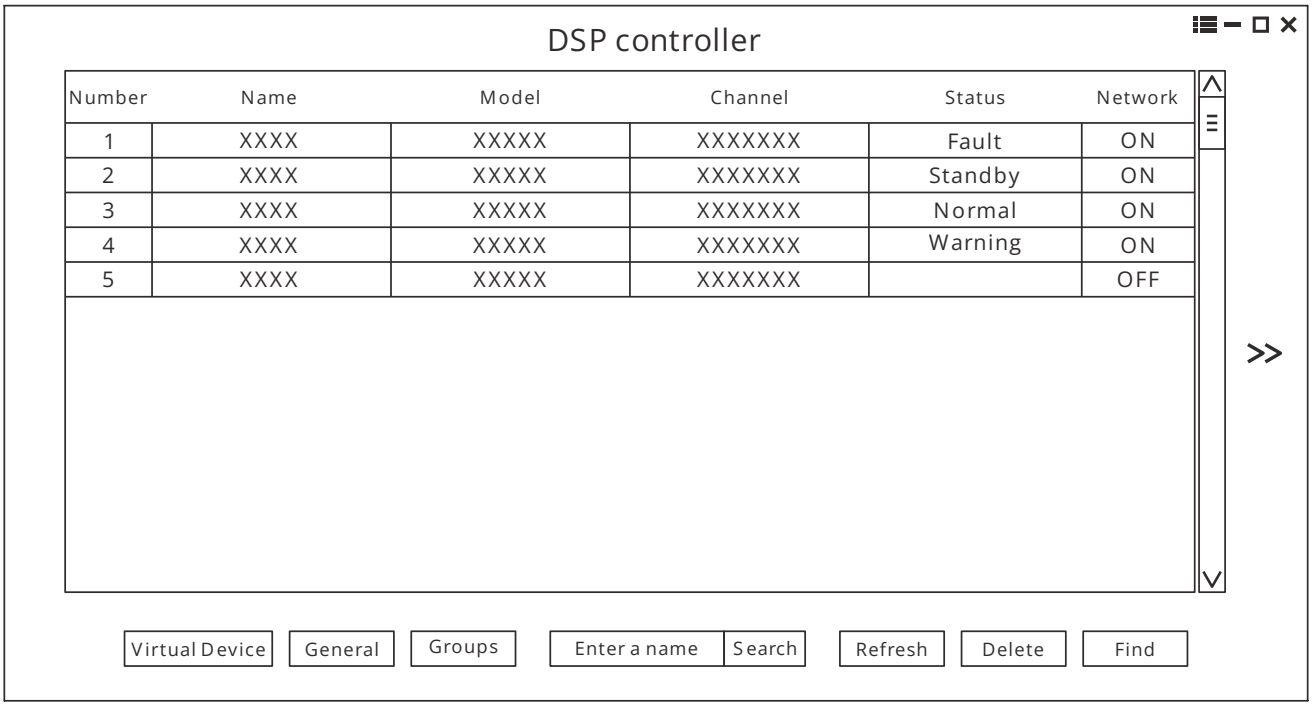
5. Info

Model Run time Communication SN FW	System management controller model. Total working time. Communication interface type. Factory serial number. Firmware version number.

Back	Go back to the previous directory.

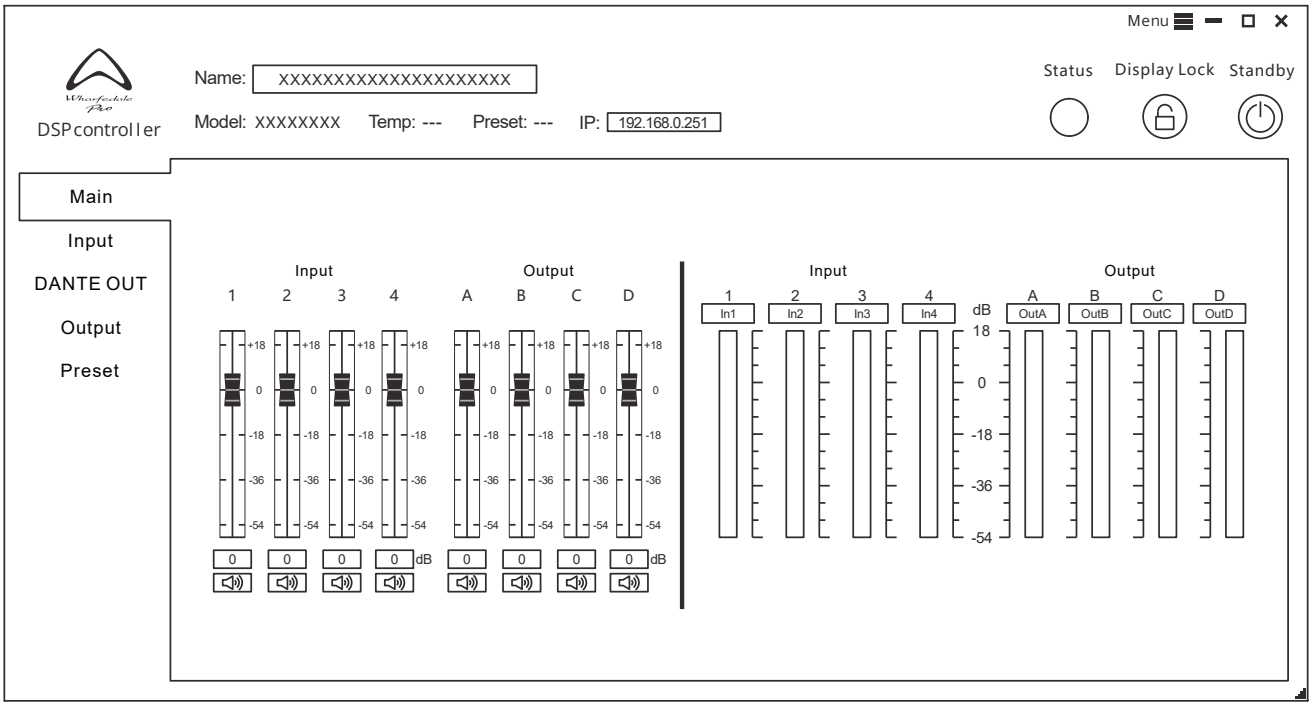
5 - Using the downloadable software

5.1 Equipment List



You can modify the equipment name, view the equipment status and even debug various equipment parameters.

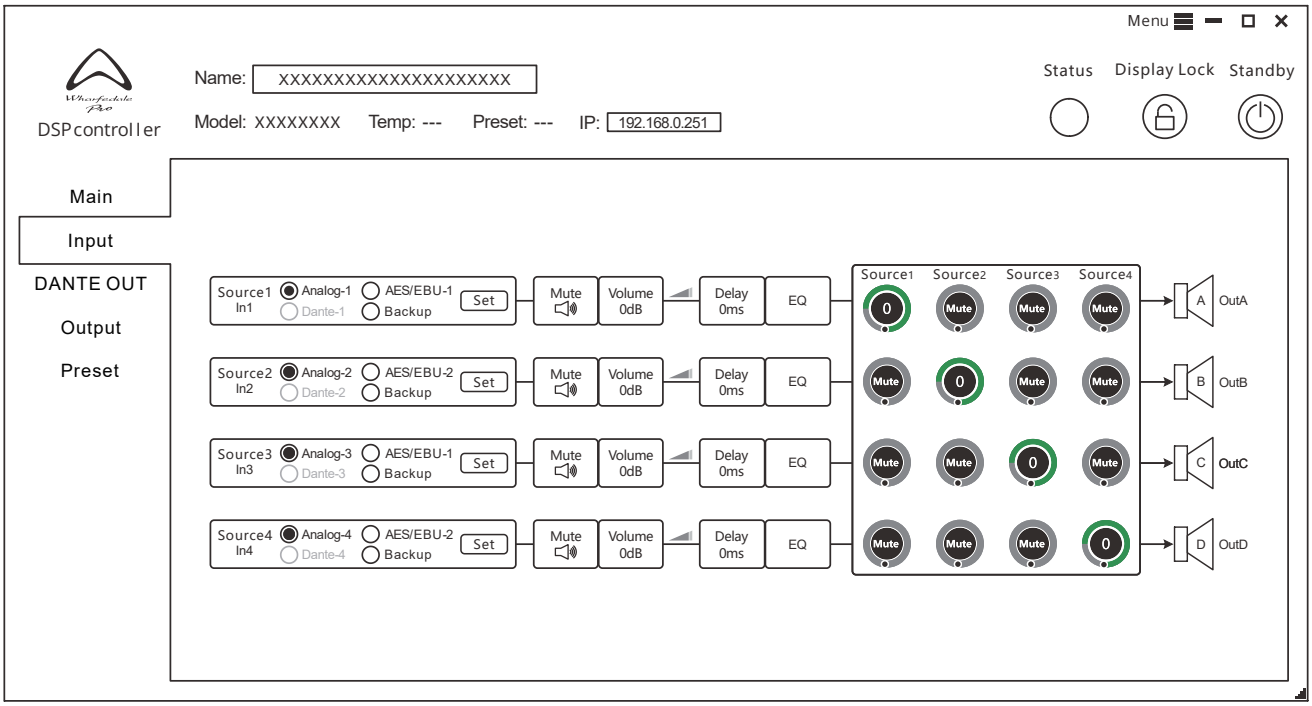
5.2 Main Control Interface



This interface provides the following functions:

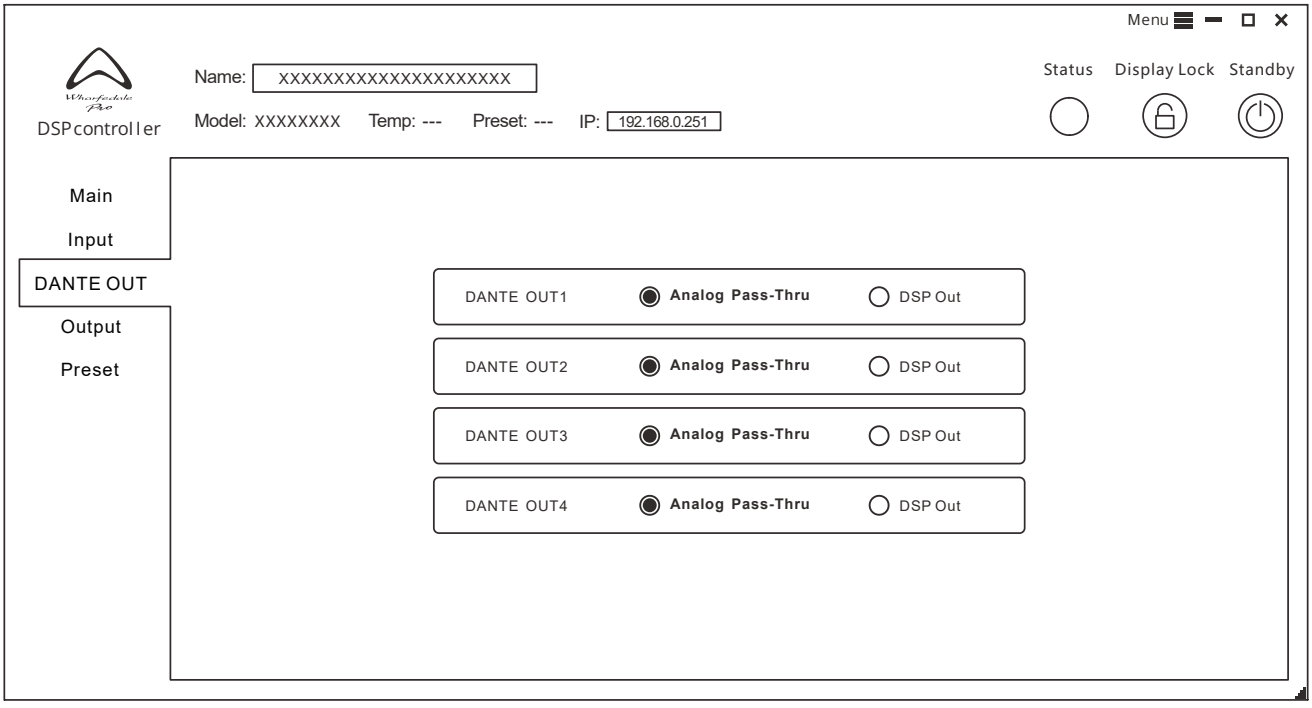
- Monitor the temperature, output voltage, and current of each processor channel, as well as detect load status (e.g., open circuit, short circuit, amplitude limiting).
- View the signal level of each input channel.
- Control the volume of each output channel.
- Turn the equipment on/off and lock the processor's display screen.
- Modify the device name and IP address.
- Define custom names for input and output channels.

5.3 Input Control Interface



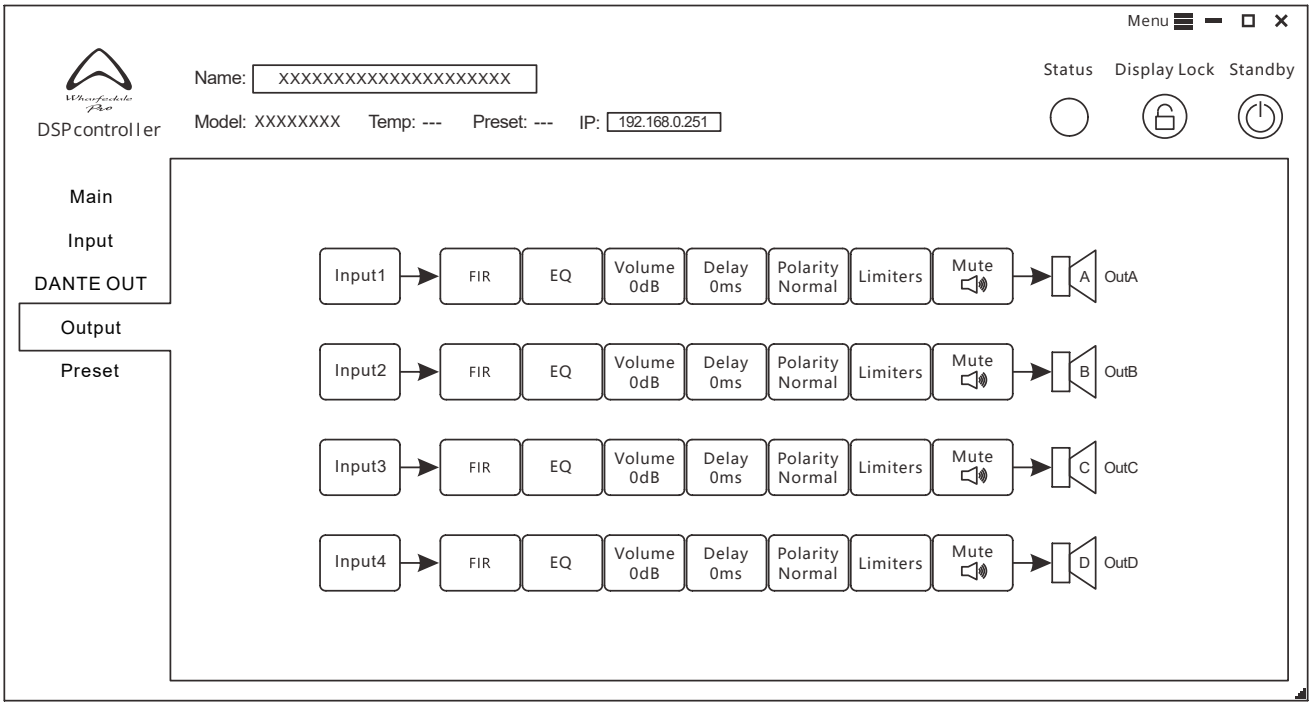
Through this screen (XC-44F), you can set the sound source delay, level matching, input delay (100ms), input equalizer, audio routing and mixing and the volume of each channel.

5.4 DANTE ® Output



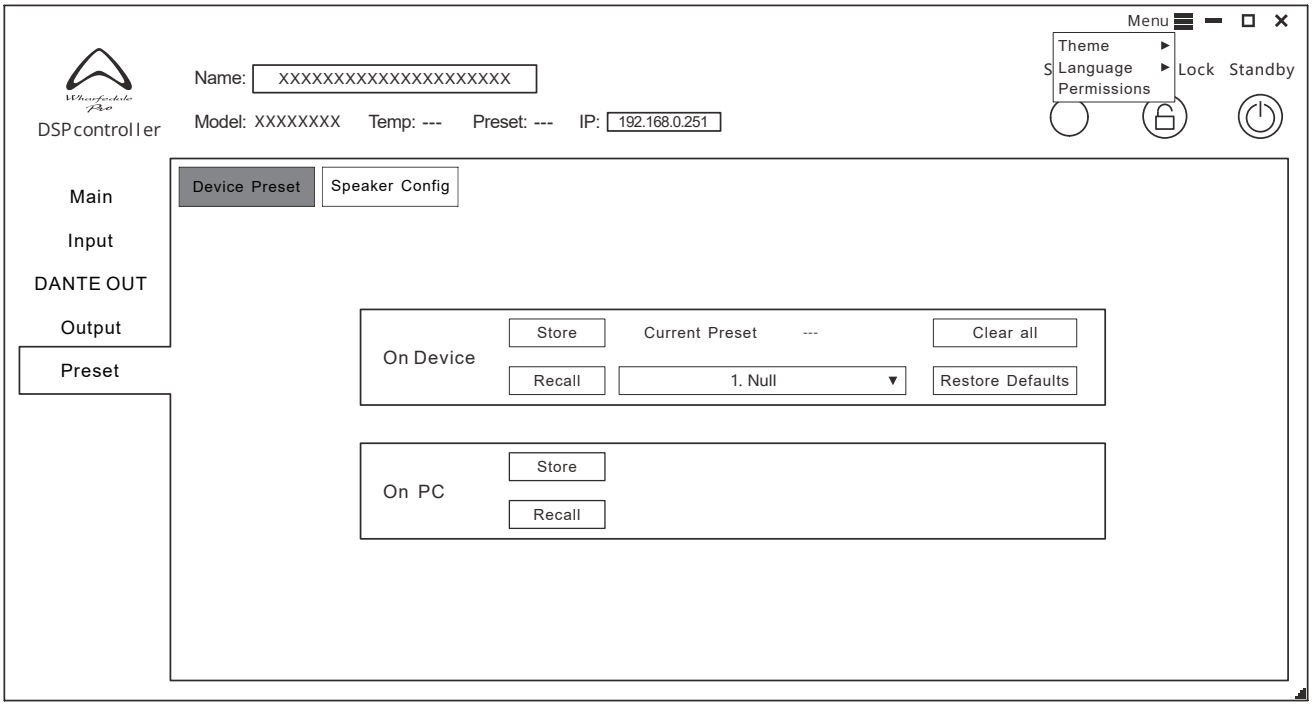
Dante ® output routing: Analogue input or DSP output can be used as a Dante ® signal source to send to Dante ® network (XC-44N only).

5.5 Output Control Interface



On this screen, you can set the FIR data (512 levels or lower), output equalizer (8 segments + high/ low pass), volume fine-tuning (-54 dB to +18 dB), delay (0 to 20 ms), polarity reversal, pressure limiter (peak value, average value) and mute.

5.6 Preset Manager



This screen allows you to configure the following settings:

- Save and recall up to 40 preset configurations.
- Edit and recall speaker database entries.
- Import and export device image data.

The menu bar on any interface also provides options to:

- Set the theme and language.
- Configure user, debug, and factory permissions (factory permissions allow customisation of user and debug permission settings).

6 - Filter introduction

	Type
High low pass filter	Butterworth: 12 dB, 18 dB, 24 dB, 36 dB, 48 dB Bessel: 12 dB, 24 dB, 48 dB Linkwitz- Riley:12 dB, 24 dB, 48 dB
PEQ	Peaking (±24 dB) , Low-shelf (±24 dB), High-shelf (±24 dB), All-pass 1ST, All-pass 2nd, General-Low, General-High, Butterworth-Low, Butterworth-High, Bessel-Low, Bessel-High.
Other functions	Bypass, Reset, Copy, Paste, Save, Phase display.

7 - Specifications

Input/Output	4x4
Input type	Analogue, AES/EBU, Dante ® (XC-44N only), Ethernet (XC-44F only)
Input impedance	20 kΩ (Balanced)，10 kΩ (Unbalanced)
Output impedance	600 Ω
Max input level	+20 dBu
Max output level	+20 dBu
THD+N	<0.02% (1kHz,0 dB)
Frequency response	typical: +0,-1dB (0 dB,20 Hz-20 kHz)
Crosstalk	<-95 dB（1kHz）
SNR	>105 dB（A weighted）
Snow Level	<-85 dBu（A weighted，0dB）
Delay	<1.8 ms（Analogue input/output，48kHz）
Main power	100-240 VAC ±10%, 50/60 Hz
Size(W×H×D)	483 x 45 x 160mm
Net weight	2.2 kg

WHARFEDALE PRO LIMITED WARRANTY

Wharfedale Pro products are warranted of manufacturing or material defects for a period of three years from the original date of purchase. In the event of malfunction, contact your authorised Wharfedale Pro dealer or distributor for information.
Please be aware that the warranty details may differ from country to country. Contact your dealer or distributor for information (available at www.wharfedalepro.com). These terms do not infringe your statutory rights.

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Feburary 2025