BLUSTREAVV→

NPA20DA
User Manual

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge Protection Device Recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Contents

Introduction

Our NPA20DA networked power amplifier delivers advanced audio integration within a commercial or residential AV installation.

The NPA20DA features a 2 x 10W digital amplifier (1 x 20W mono) audio output and Dante® audio integration.

The NPA20DA can be powered via PoE or PoE+ from a compatible network switch, or locally should the switch not support PoE. The unit also includes the ability to lower the amplifier power output subject to PoE capabilities, DSP with a 31 band EQ, audio delay for lip sync correction, and control via front panel, RS-232, TCP/IP, web-GUI or 12V trigger.

FEATURES:

- Advanced network audio amplifier with Dante® integration
- Supports 2 x 10W @ 4 / 8 ohm, 1 x 20W @ 4 / 8 ohm
- Supports power via PoE+ on Dante® LAN connection or local power supply*
- 2ch Dante® / AES67 audio input
- DSP with 31 band EQ with +3dB/-10dB and audio delay
- Local 0V / 5~12V input trigger for automated power control
- Control via front panel, RS-232 and IP
- Auto standby mode with signal sensing
- In-built web-GUI for setup and control

Amp power limited when using PoE / PoE+

Front Panel Description
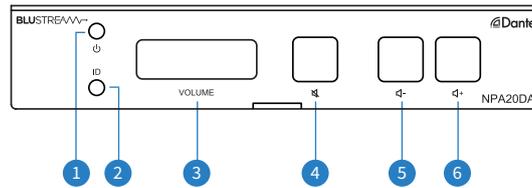
1 Power Status LED

2 ID LED - Illuminates to assist in identification of the device

3 Volume Level LED's - Illuminates to show current volume level

4 Volume Mute Button - Toggles audio mute on or off

5 Volume - Button - Decrease master output volume

6 Volume + Button - Increase master output volume

Rear Panel Description
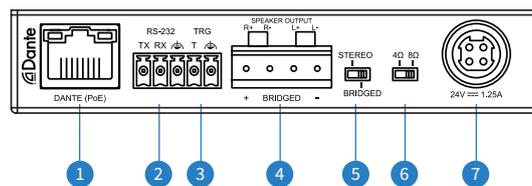
1 Dante® (PoE+) Port - RJ45 connector supporting PoE+ to power NPA20DA from the network switch and for for TCP/IP and web-GUI control of the device

2 RS-232 - Phoenix connector for RS-232 control of the device

3 Trigger Input - Phoenix connector triggers amplifier output on/off. Trigger voltage can be configured as high voltage (5~12V) or low voltage (0V) to mute amplifier output.

4 Speaker Output - Phoenix connector to connect speaker outputs, see Speaker Connections section for more information

5 Speaker Configuration - Select between stereo or bridged wiring configuration for speaker output

6 Speaker Impedance Switch - Select 4 or 8 ohm impedance to match connected speakers

7 Power Port - Use 24V/1.25A DC power adaptor (not included) if not powered via PoE+ device
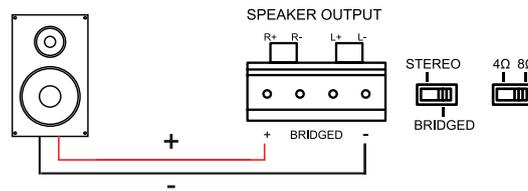
Speaker Connections

The NPA20DA supports low Impedance (4-8ohm) speakers. It is necessary to configure the Speaker Impedance Switch as well as wire up the speakers according to the specific speakers you are using. Wiring examples for each of the available configurations are as follows:

Low Impedance (4-8ohm) Stereo Speakers:
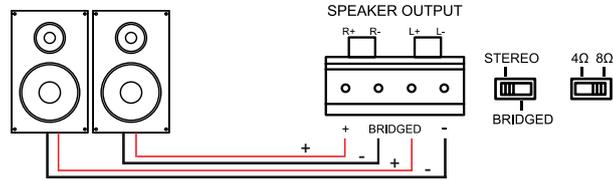
**Low Impedance (8ohm) Mono Speaker:**

Amplifier Output

The NPA20DA amplifier is capable of outputting the same power at both 4 ohms and 8 ohms. The amplifier output power varies depending on the input power supply or PoE adapter connected to it, it does this by adjusting the internal gain to allow you to get the most of the amplifier. Please ensure that you select the correct impedance option via the speaker impedance selection switch on the rear of the device.

POWER SOURCE	WRMS PER CHANNEL @ 4/8 OHM	WRMS BRIDGED @ 8 OHM
24V/1.25A DC	2x 10W	20W
PoE+ Type 2 Class 4	2x 7.5W	15W
PoE Class 0	2x 5W	10W

Trigger Connection

The NPA20DA features a trigger input to allow 3rd party devices to trigger the units power on or off. When the trigger input senses a low voltage level (0V) it will enable the amplifier output, while when it senses a high voltage level (5-12V) it will disable the amplifier out. This feature is enabled by default, and can be adjusted via the web-GUI, or control API.
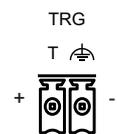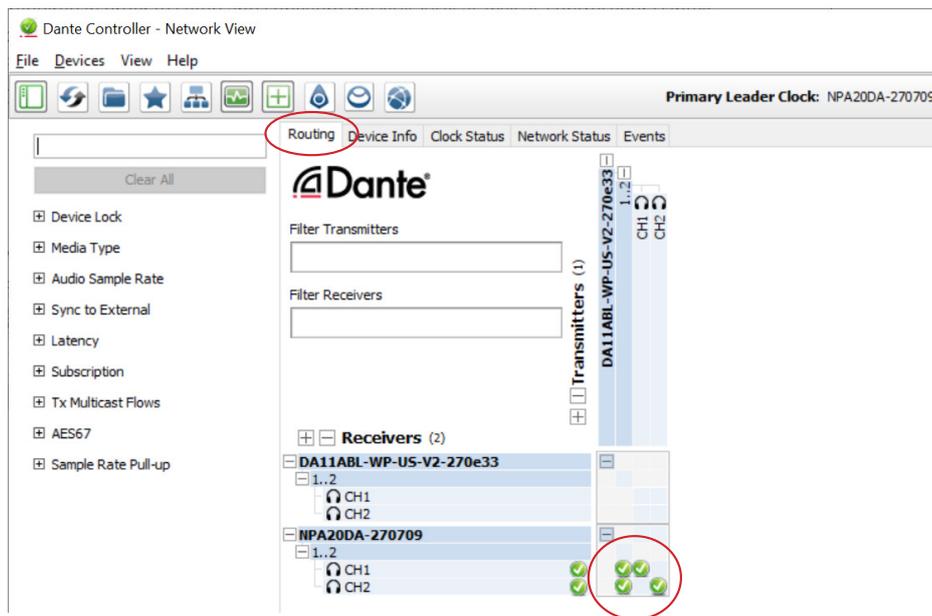
Dante® Audio & Dante® Controller

Dante® Controller software is required in order to setup and configure the NPA20DA as well as control your Dante® network. Audinate provide extensive training videos and documentation on their website. This can be found here: http://www.audinate.com/products/software/dante-controller

Upon connecting the NPA20DA to a compatible network, the Dante® Controller software should automatically discover the device. The NPA20DA will appear in the Dante® Controller with the name "NPA20DA". On the "Routing" screen it is possible to then create audio routing between Dante® transmitters and receivers within the same system.

Please ensure your PC is on the same network as your Dante® devices. Dante is not able to transmit over WiFi and it is recommended to hardwire into the Dante® network. Having multiple network devices enabled can also confuse the Dante® Controller software so it is recommended to disable WiFi during configuration.

It is possible to change various Dante® related settings of the NPA20DA under the "Device Info" screen in the Dante® Controller software. To do so, select the "Device Config" menu.

Here it is possible to adjust the sample rate of the NPA20DA. **Please note:** that Dante® products can only transmit or receive audio from other Dante® products that are set up with the same sample rate. A mismatch in sample rate may stop audio from transmitting.

Under the "Device Config" screen the latency of the NPA20DA can be configured from 2-10 milliseconds.
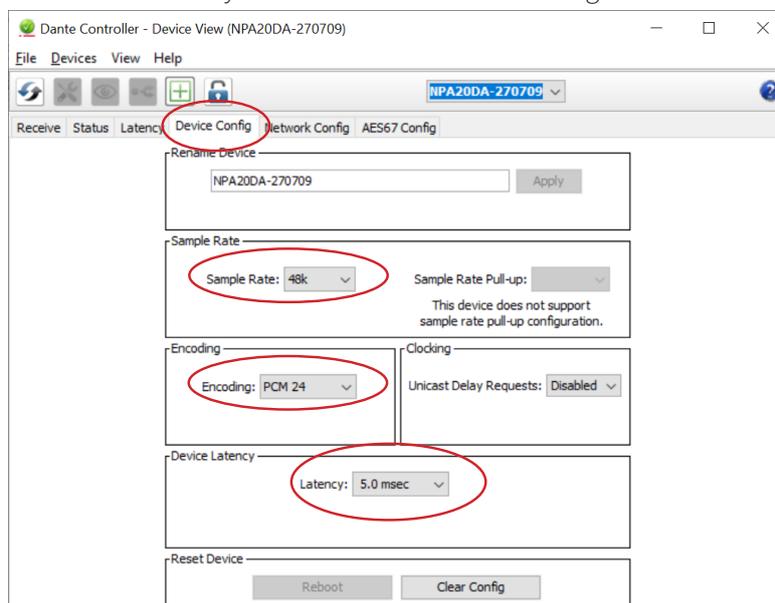
Web-GUI Control

The NPA20DA features an in-built web-GUI for control and configuration of the unit. By default the device is set to DHCP, however if a DHCP server (eg: network router) is not installed the device IP address will revert to below details:

Default **Username**: blustream   Default **Password**: 1234   Default **IP Address**: 192.168.0.200

The device can also be accessed via its mDNS name which is defaulted to: http://NPA20DA.local/

The web-GUI supports multiple users along with multiple user permissions as follows:

Guest Account - This account does not require a user to login. The Guest account can only adjust the output volume of the NPA20DA. Guest access can be enabled or disabled by the Admin if required.

User Accounts - User accounts can be utilised, each with individual login details. User accounts can be assigned permissions to specific areas and functions. A User must log in to make use of these functions.
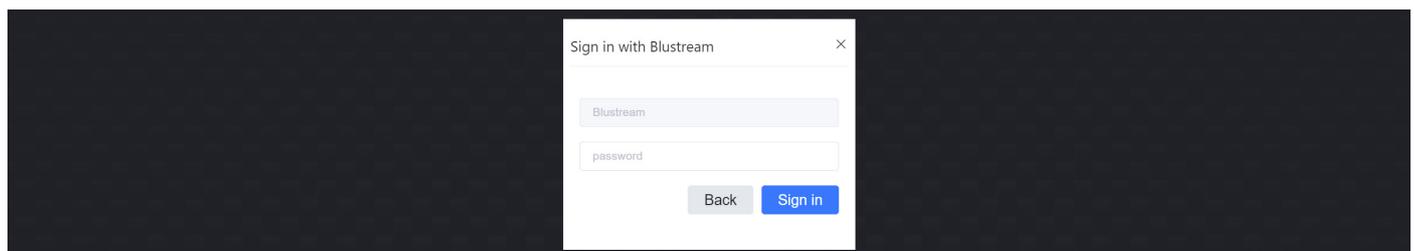
Admin Account - This account allows full access to all functions of the unit as well as assigning users with permissions as required.

Login Page:

The Login Page allows a user or admin to login and access additional functionality within the web GUI.
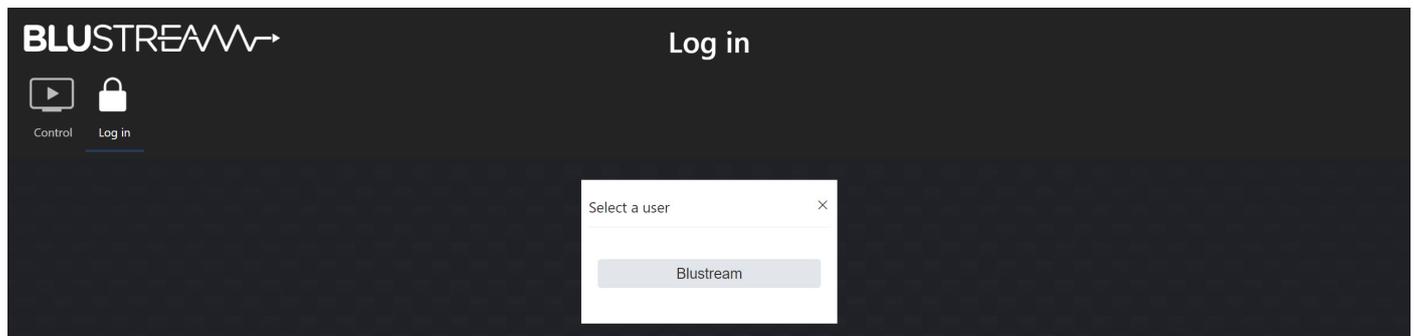
Once a user is selected from the list it is required to enter the password for that user in order to sign in.


Please note: the first time the Admin logs into the web GUI, the default admin password will need to be changed. It is important to record this password as there is no way to recover it in the event that it is forgotten.
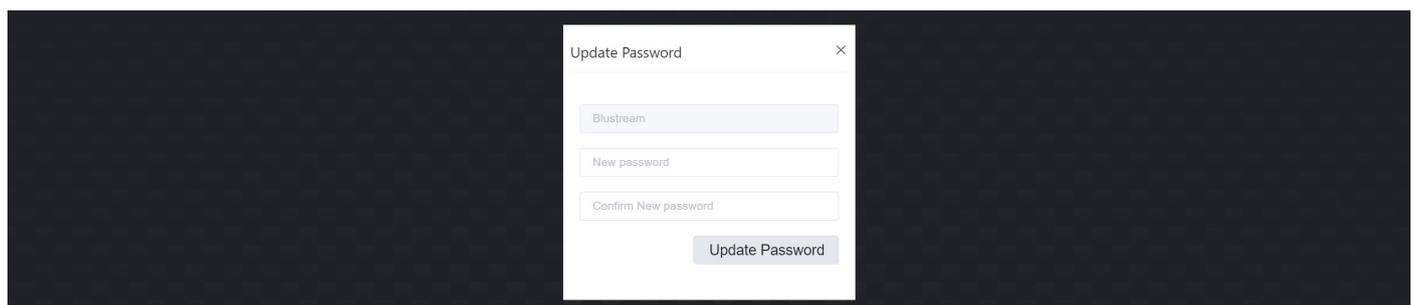
Guest Control Page:

The Guest Control Page allows a guest to adjust the master output volume of the unit by using the volume slider or the volume up / down buttons as well as the mute toggle button.
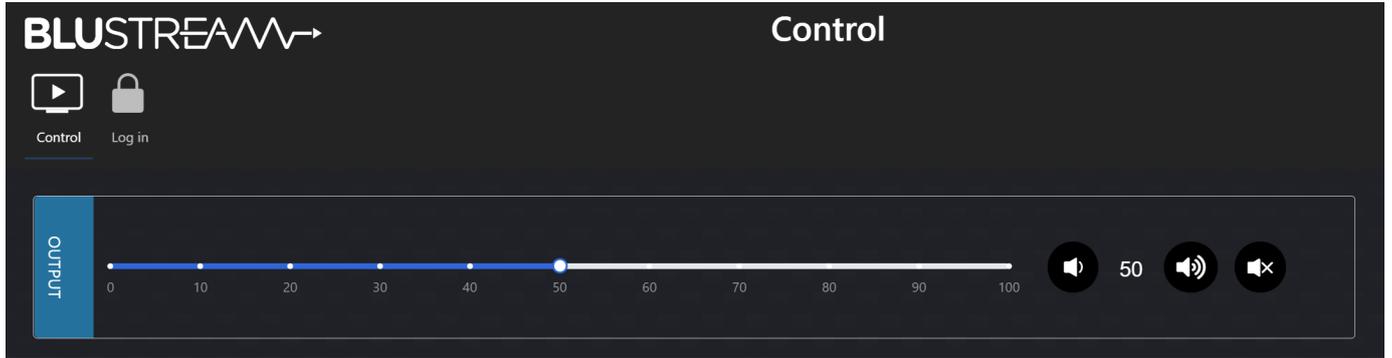
User Control Page:

The User Control Page allows a user to adjust the volume for the input our output, as well as mute the audio signal. The input volume adjustment could act as an audio limit function to limit the maximum output volume. A User can also adjust the signal mix (single channel only, stereo, or summed mono), audio delay, or 31 band graphic eq with +3dB / -10dB of adjustment.

The user can also update their password via the Update Password button, or log out via the Log Out button.
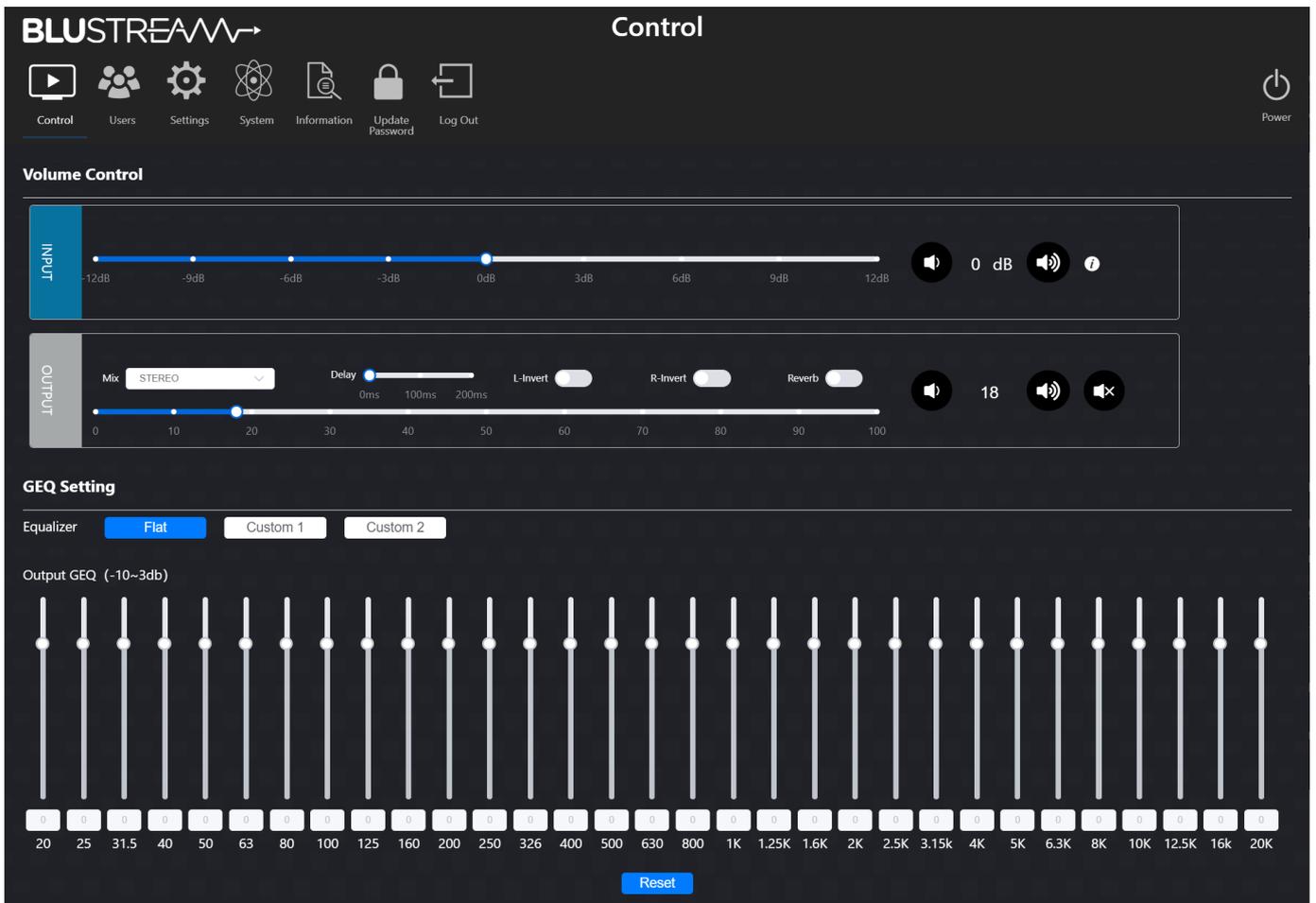
User Page:

The Users page allows the admin to add, remove or disable users. Updating passwords of a user can be carried out from here also.
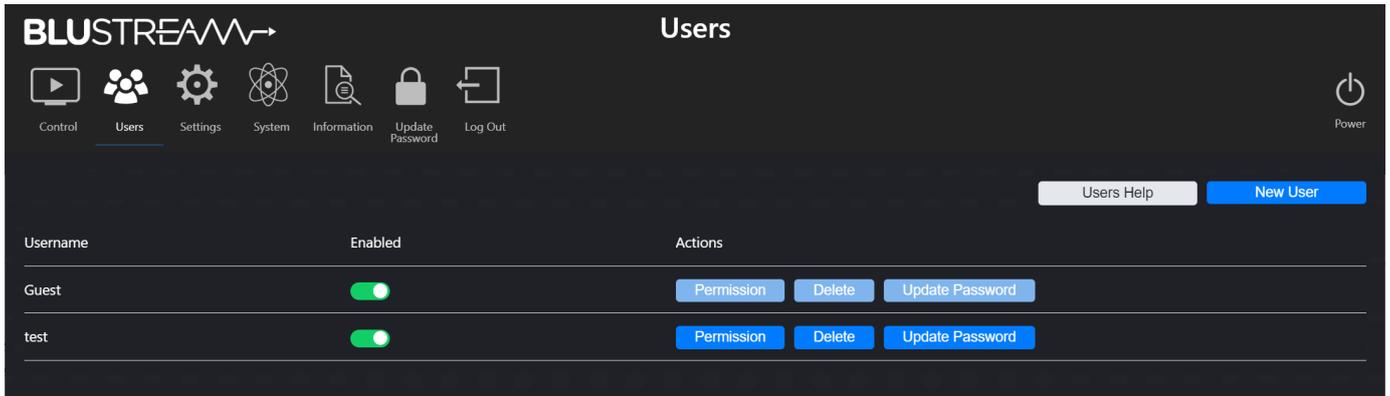
Settings Page:

The Settings page allows users to change settings specific to the network configuration of the NPA20DA such as the devices IP address and port settings. You can also adjust the mDNS or Domain Name for the device, which can also be used to access unit via, for example: http://NPA20DA.local/
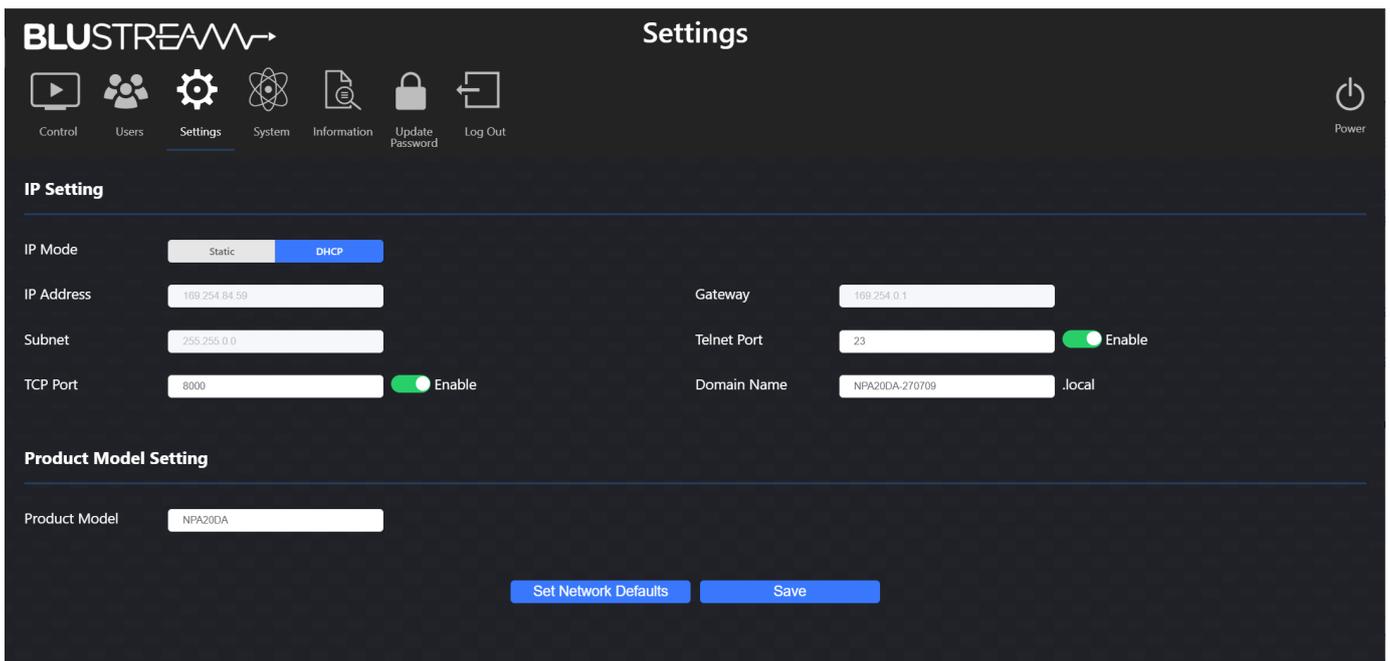
System Page:

The System page allows users to change the system configuration of the NPA20DA such as:

- Indentification - flashes the ID LED on front of the unit for the specified time period

- Key Lock On/Off - enable or disable to front panel keys from functioning

- Power On/Off - turn the unit on or off

- Power Mode - if the NPA20DA is connected to DC power supply, then PoE power modes will not be selectable. If the NPA20DA is connected via PoE, it will default to the minimum PoE power specification (PoE Class 0). It is recommended to set this to the PoE power specification of the PoE adapter powering the NPA20DA

- Input Trigger On/Off - enable or disable input trigger function

- Front Panel Lights - enable or disable front panel LED lights, or time out after selected time (15, 30 or 60 seconds)

- Serial Baud Rate - specify the baud rate of the serial RS-232 port on the device

- Auto Standby Time (minutes) - specify the time in minutes where the unit will enter standby mode if no audio signal is being received on the selected input (default is 10 minutes)

- Firmware Update (MCU / DEP SDK) - allows a user to update the firmware of the device

- Factory Reset (excludes Network Settings) - factory defaults all settings except for network configuration

- Factory Reset (includes Network Settings) - factory defaults all settings including network configuration

- Reboot - power cycles the unit without changing any configuration settings
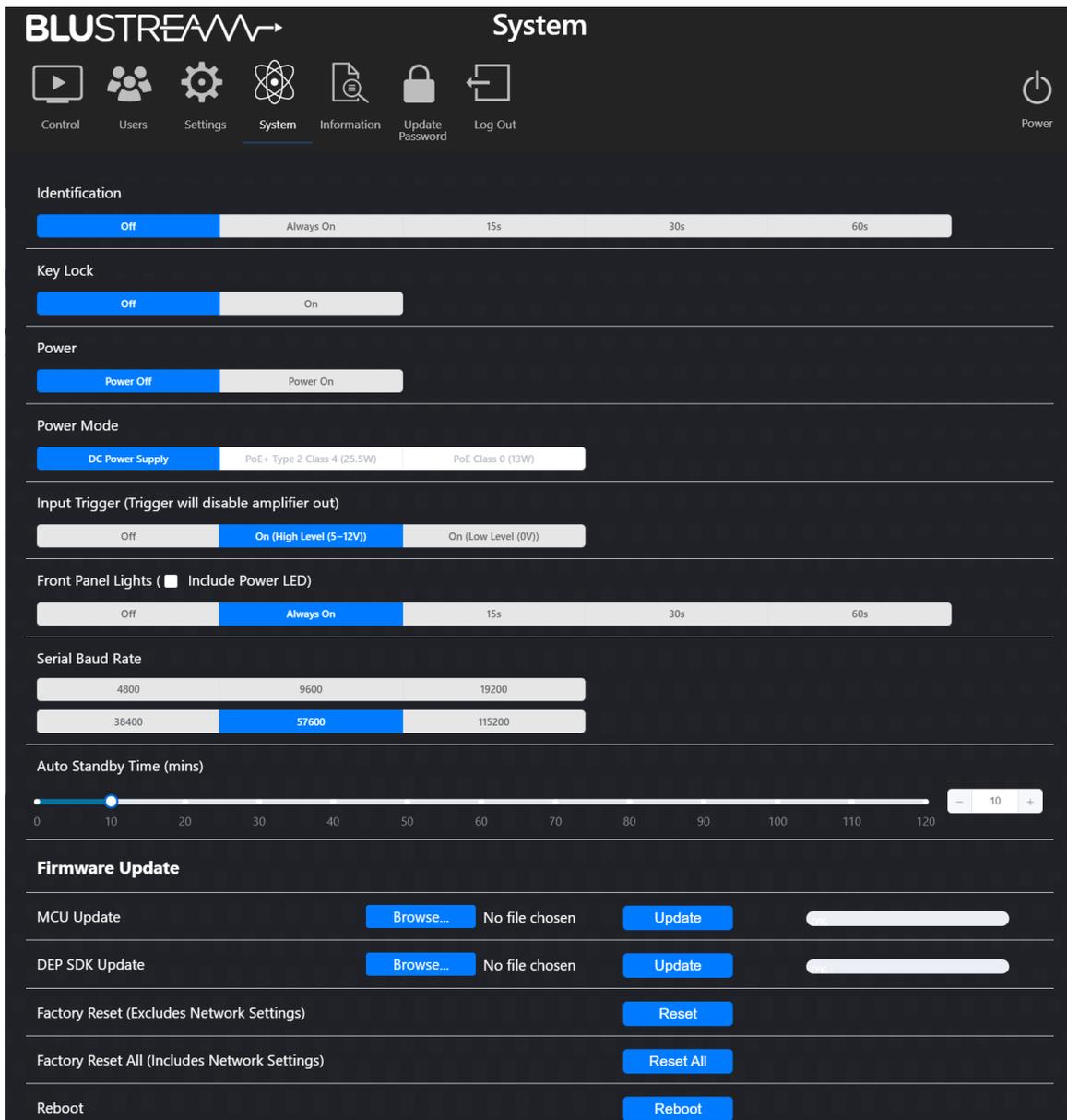
Information Page:

The Information page provides useful information such as firmware version and network settings.

BLUSTREAM

Information

Control | Users | Settings | System | Information | Update Password | Log Out | Power

Status

Model	NPA20DA
Firmware Version	V1.2.0/V2.0.0
DEP SDK	V1.3.1.1
Hostname	NPA20DA-270709
IP Address	169.254.84.59
Subnet Mask	255.255.0.0
Gateway	169.254.0.1
MAC Address	34:D0:B8:27:07:09
Uptime	0000:01:56:09

BLUSTREAM⌇→

NPA20DA USER MANUAL

Schematic

Speaker Options

Control Processor

1G Network Switch

Dante NETWORK

BLUSTREAM⌇→

Example Schematic
NPA20DA

Power
LAN
RS-232
Speaker Cable

12

www.blustream.com.au | www.blustream-us.com | www.blustream.co.uk
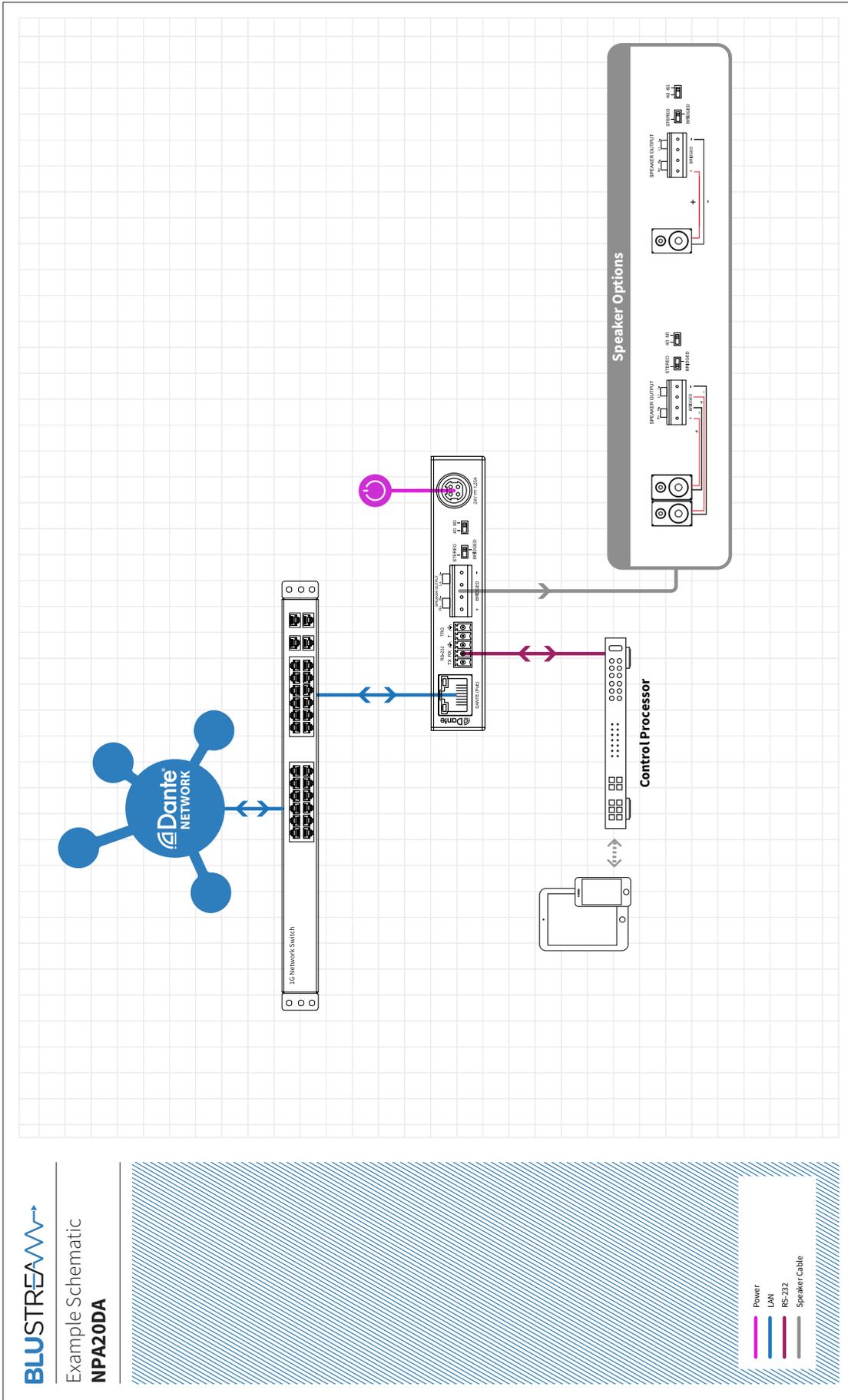
Telnet & RS-232 Control Port

The NPA20DA can be controlled via a 3-pin Phoenix to serial RS-232 cable or via Telnet.

The RS-232 communication settings and commands are as follows:

Baud Rate: 57600 bps	Parity: None	Flow Control: None
Data Bit: 8-bit	Stop Bit: 1-bit	

RS-232 / TELNET COMMAND	DESCRIPTION
?/HELP	Print Help Information
STATUS	Print System Status And Port Status
UPTIME	Print System Uptime
PON	Power On, System Run On Normal State
POFF	Power Off, System Run On Power Save State
PWLED FOLLOW ON/OFF	ON: Set System Power Led Follow LCD Status OFF: Set System Power Led Not Follow LCD Status In Power On State,Power Led Always On
RESET	"Reset System Settings To Default (Should Type ""Yes"" To Confirm, ""No"" To Discard)"
RESET ALL	"Reset System and Network Settings To Default (Should Type ""Yes"" To Confirm, ""No"" To Discard)"
REBOOT	Set System Reboot
AUTO STB xx	Set System Auto Standby Time xx=0:Auto Standby Off xx=[1...120]:Auto Standby Time,(mins)
AMPMODE xxx	Set Amp Power to xxx xx=1:PoE+ Type 2 Class 4 (25.5W) xx=2:PoE Class 0 (13W)
KEY ON/OFF	Set System KEY Control On Or Off
LCD ON/OFF/15/30/60	Set LCD Always On Or Auto Turn Off In Power On State Or Turn On 15s/30s/60s
IDLED ON/OFF/15/30/60	Set IDLED On Or Auto Turn Off In 15/30/60s In Power On State Or Turn On 15s/30s/60s
TRIG ON/OFF yy	Set Trigger On Or Off With Trigger Level:yy yy=0:Low Level(0V) Mute Output yy=1:High Level(5 - 12V) Mute Output
RSB xx	Set RS232 Baud Rate to xx bps xx=[1...6]:1:4800,2:9600,3:19200, 4:38400,5:57600,6:115200
IN GAIN yy	Set Input GAIN to yy yy=[-12...12]:Input Gain Value
IN GAIN+	Increase Input Gain
IN GAIN-	Decrease Input Gain
OUT xx VOL yy	Set Output:xx Volume to yy xx=[0...1]:0:ALL,1:AMP yy=[0...100]:Volume Value
OUT xx VOL+	Increase Output:xx Volume
OUT xx VOL-	Decrease Output:xx Volume
OUT xx MUTE ON/OFF	Set Output:xx Mute On Or Off
OUT xx DLYT yy	Set Output:xx Delay Time to yy(ms) yy=[1...200]:Delay Time, Millisecond
OUT xx REVB ON/OFF	Set Output:xx Reverb On Or Off
OUT xx PHASE yy INV ON/OFF	Set Output:xx L-Inverter Or R-Inverter On Or Off yy=[0,1]0:LEFT,1:RIGHT

RS-232 / TELNET COMMAND	DESCRIPTION
OUT xx MIX yy	Set Output:xx Mix yy yy=[1,2]:1:STEREO,2:LEFT-CH yy=[3,4]:3:RIGHT-CH,4:LEFT-CH and RIGHT-CH
OUT xx EQ yy VAL zz	Set Output:xx GEQ:yy to zz yy=[1..31]:EQ Index zz=[-10..3]:EQ Value
OUT xx EQ PRESET yy	Set Output:xx GEQ:yy to Preset:yy yy=[1...3]:1:Flat,2:Custom1,3:Custom2
NET DHCP ON/OFF	Set Auto IP(DHCP) On Or Off
NET IP xxx.xxx.xxx.xxx	Set IP Address
NET GW xxx.xxx.xxx.xxx	Set Gateway Address
NET SM xxx.xxx.xxx.xxx	Set Subnet Mask Address
NET TCPPORT ON/OFF	Set TCP/IP On Or Off
NET TCPPORT xxxx	Set TCP/IP Port
NET TN ON/OFF	Set Telnet Port On Or Off
NET TN xxxx	Set Telnet Port
NET RB	Network Reboot and Apply New Config!!!
NET DNS xxxx	Set DNS Domain Name To xxxx

Specifications

NPA20DA

- **Audio Inputs:** 1 x RJ45 Dante® Audio connection
- **Speaker Outputs:** 1 x 4-Pin Phoenix connector (4 / 8 ohm speaker)
- **RS-232 Serial Port:** 1 x 3-Pin Phoenix connector
- **Trigger Input:** 1 x 2-Pin Phoenix connector
- **Casing Dimensions (W x H x D):** 112mm x 144mm x 22mm
- **Shipping Weight:** 1.0kg
- **Operating Temperature:** 32°F to 104°F (0°C to +40°C)
- **Storage Temperature:** -4°F to 140°F (-20°C to +60°C)
- **Power Supply:** PoE+ Type 2 Class 4, or 24V/1.25A DC 4-pin DIN (power supply not included)

AMP POWER SPECIFICATION

POWER SOURCE	AMP OUTPUT
24V/1.25A DC	20W
PoE+ Type 2 Class 4	15W
PoE Class 0	10W

NOTE: *Specifications are subject to change without notice. Weights and dimensions are approximate.*

Package Contents

NPA20DA

- 1 x NPA20DA
- 1 x Mounting kit
- 1 x User Manual

Acknowledgements

Dante® is a registered trademark of Audinate Pty Ltd.

Certifications

FCC Notice

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.

CAUTION - changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADA, INDUSTRY CANADA (IC) NOTICES

This Class B digital apparatus complies with Canadian ICES-003.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CANADA, AVIS D'INDUSTRY CANADA (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003.

Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

CORRECT DISPOSAL OF THIS PRODUCT

This marking indicates that this product should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.