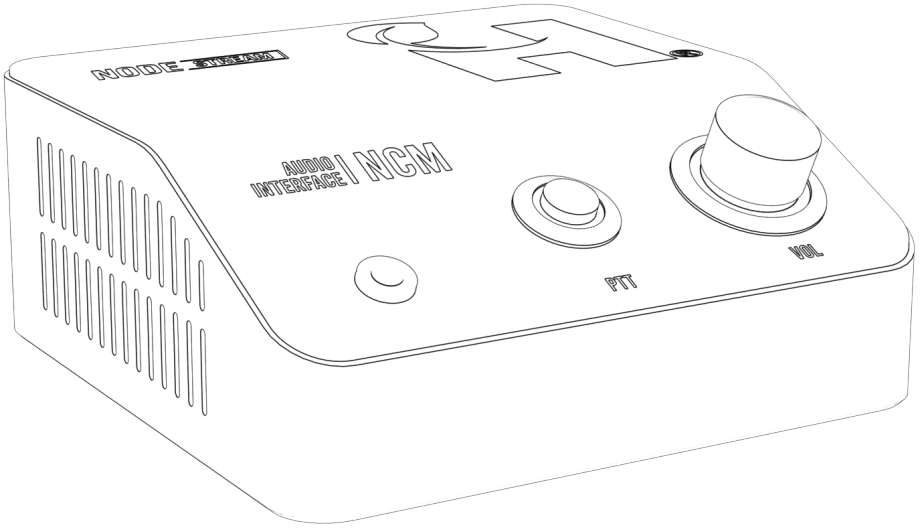
AUDIO INTERFACE | NCM

User Manual



NODESTREAM X

Please read these instructions carefully before using this product

Information for your safety

The device should only be serviced and maintained by qualified service personnel. Improper repair work can be dangerous. Do not attempt to service this product yourself. Tampering with this device may result in injury, fire, or electric shock, and will void your warranty.

Be sure to use the specified power source for the device. Connection to an improper power source may cause fire or electric shock.

Operation Safety

Before using the product, ensure all cables are not damaged and connected correctly. If you notice any damage, contact the support team immediately.

- To avoid short circuits, keep metal or static objects away from the device.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Operating environment temperature and humidity:

Temperature:	Operating: 0°C to 35°C	Storage: -20°C to 65°C
Humidity (non-condensing):	Operating: 0% to 90%	Storage: 0% to 95%

- Unplug the device from the power outlet before cleaning. Do not use liquid or aerosol cleaners.
- Contact the support team support@harvest-tech.com.au if you encounter technical problems with the product.

Symbols

Warning or caution to prevent injury or death, or damage to property.

Extra notes on the topic or steps of the instructions being outlined.

Further information to content outside the scope of the user guide.

Extra pointers or suggestions in executing instructions.

Contact and Support
support@harvest-tech.com.au

User Resources

Harvest Technology Pty Ltd
7 Turner Avenue, Technology Park
Bentley WA 6102, Australia
harvest.technology

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Warranty

The warranty for this product can be found online at:
https://harvest.technology/terms-and-conditions/

FCC Compliance Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

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

CE/UKCA Compliance Statement

Marking by the (CE) and (UKCA) symbol indicates compliance of this device with the applicable directives of the European Community and meets or exceeds the following technical standards.

- Directive 2014/30/EU - Electromagnetic Compatibility
- Directive 2014/35/EU - Low Voltage
- Directive 2011/65/EU - RoHS, restriction of the use of certain hazardous substances in electrical and electronic equipment

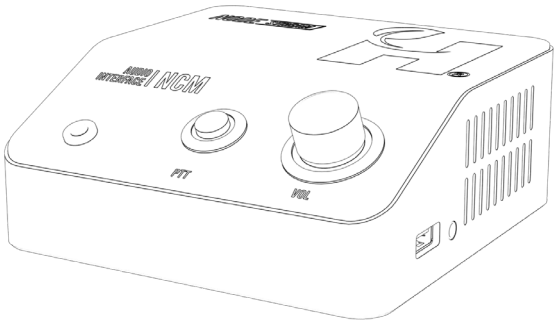
Warning: Operation of this equipment is not intended for a residential environment and could cause radio interference.

CONTENTS

Getting Started

Introduction

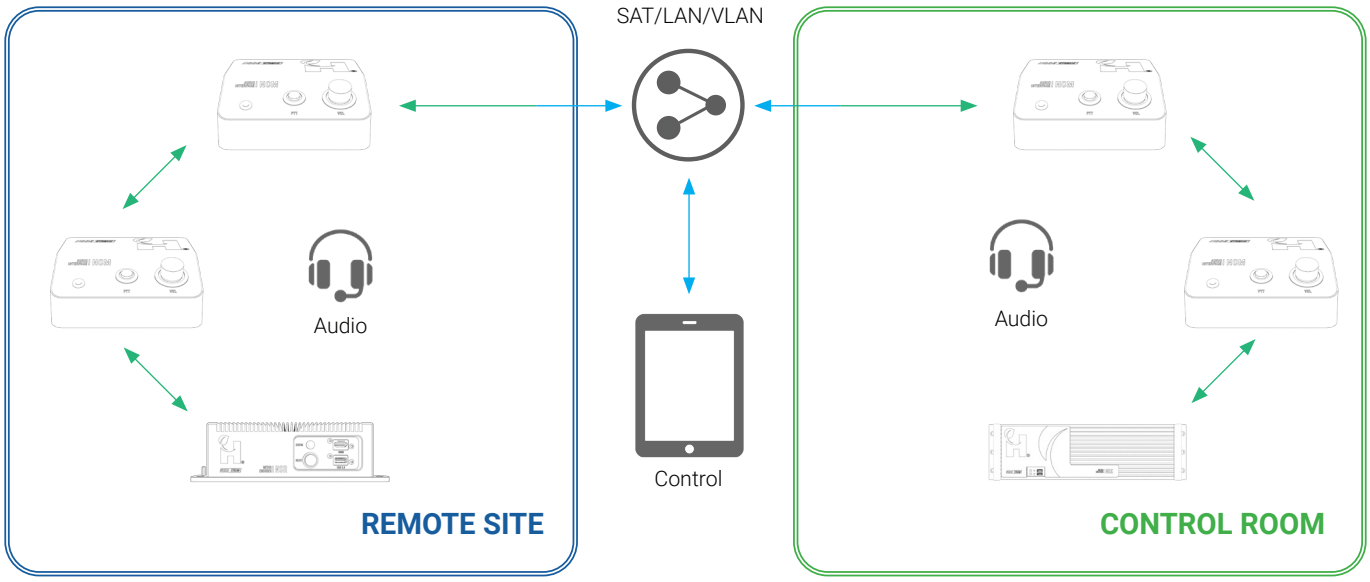
Welcome to your Nodestream Nodecom (NCM) device. The NCM is designed to for use as a single channel desktop audio streaming device for communication with other Nodestream devices within your Nodestream group. Integrated UI allows for intuitive control and feedback of system status.



Key Features

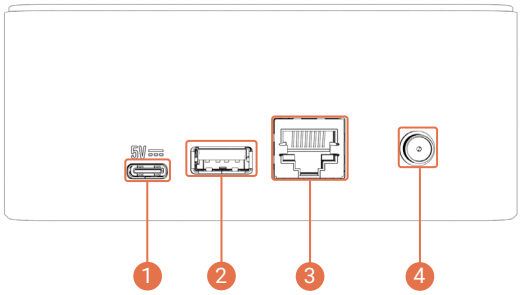
- Low bandwidth, low latency streaming of 1 audio channel
- Small desktop device
- Multiple input types - USB and analog audio
- Low power consumption
- Military grade security - 384-bit encryption

Typical System Setup



Connections / UI

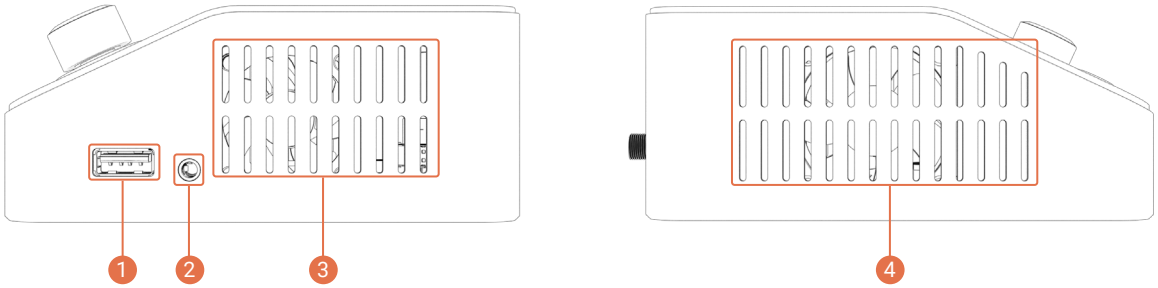
Rear



1. **Power Input**
   USB C - 5VDC (5.1VDC preferred).
2. **USB-A 2.0**
   Used for connection of accessories, i.e. speakerphone, headset.
3. **Gigabit Ethernet**
   An RJ45 connection used to connect to the customer network.
4. **WiFi Antenna**
   SMA connector for connection of supplied WiFi antenna.

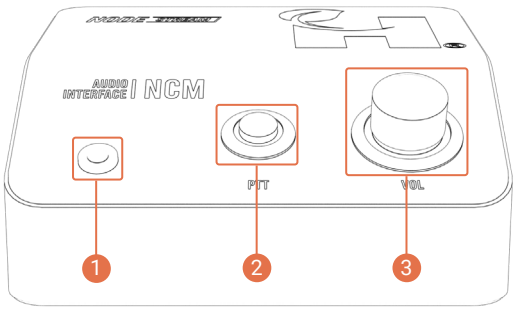
Use only supplied or approved PSU and cable. Performance and operation may be affected when using alternatives.

Side



1. **USB-A 2.0**
   Used for connection of accessories, i.e. speakerphone, headset.
2. **Analog Audio**
   3.5mm TRRS jack for connection of audio devices.
2. **Cooling Intake**
   This is an intake vent for the cooling system. As air is drawn in through this vent, take care not to obstruct.
3. **Cooling Exhaust**
   This is an exhaust vent for the cooling system. As air is exhausted through this vent, take care not to obstruct.

UI



1. **Status LED**
   RGB LED to indicate system status.
2. **Push to Talk**
   Controls audio input when an audio connection is active. LED ring indicates audio connection status.
3. **Volume Control**
   Controls input and output volume levels, press to toggle mode. LED ring indicates current level.

> Nodestream devices are supplied with a Quick Start Guide for installation and detailed UI function.
> Scan the User Resources QR code on the last page for access

Configuration

Overview

Configuration of your Nodestream device is performed via the system Web Interface. From here you can:

- View system information
- Configure network(s)
- Set user login credentials
- Enable/Disable remote support
- Manage Enterprise Server settings
- Manage updates

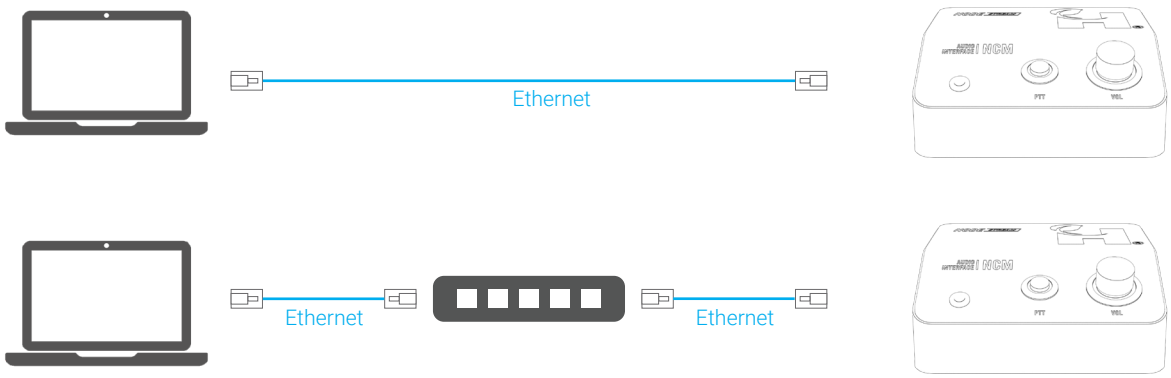
Web Interface

The Web Interface can be accessed via a web browser of a PC connected to the same network. Follow the steps below to log in.

Default username = admin
Default password = admin

Web Interface is not available until the Nodestream software has started

Connect your computer to the same network as your device or directly to the device via an Ethernet cable.



DHCP Enabled Network

1. Connect the Ethernet port of your device to your LAN and power it up.
2. From a web browser of a computer connected to the same network, enter the device IP address or http://serialnumber.local , e.g http://au2234ncmx1a014.local
3. When prompted, enter your login details.

Serial number can be found on the base of your device

Non DHCP Enabled Network

When a device is connected to a non DHCP enabled network, and its network has not been configured, the device will fall-back to a default IP address of 192.168.100.101.

1. Connect the Ethernet port of your device to your LAN and power it up.
2. Configure the IP settings of a computer connected to the same network to:

   IP 192.168.100.102
   Subnet 255.255.255.252
   Gateway 192.168.100.100

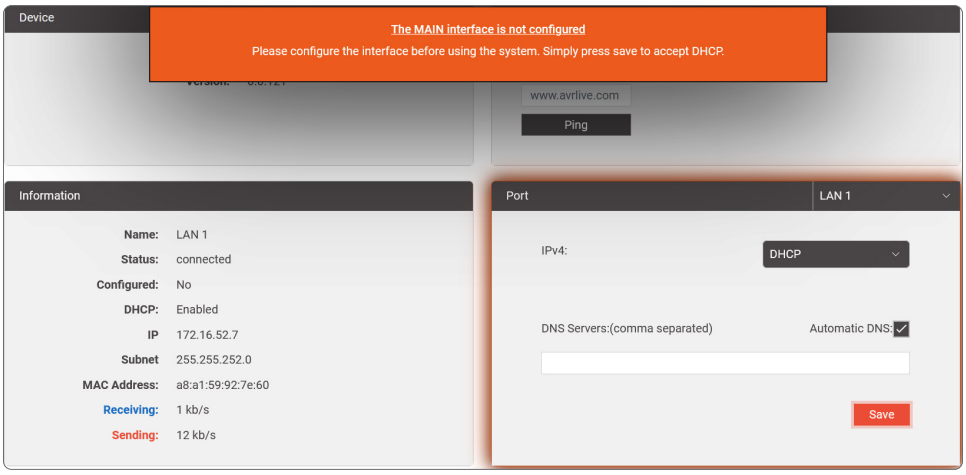
3. From a web browser, enter 192.168.100.101 in the address bar.
4. When prompted, enter your login details.

When configuring multiple devices on a non DHCP enable network, due to IP conflicts, only 1 device can be configured at a time. Once a device has been configured, it may be left connected to your network

Initial Configuration

The Ethernet network of your Nodestream device must be configured to ensure a stable connection and prevent the device from setting it's IP address to default static, refer "Non-DHCP Enabled Network" on page 5 for further information.

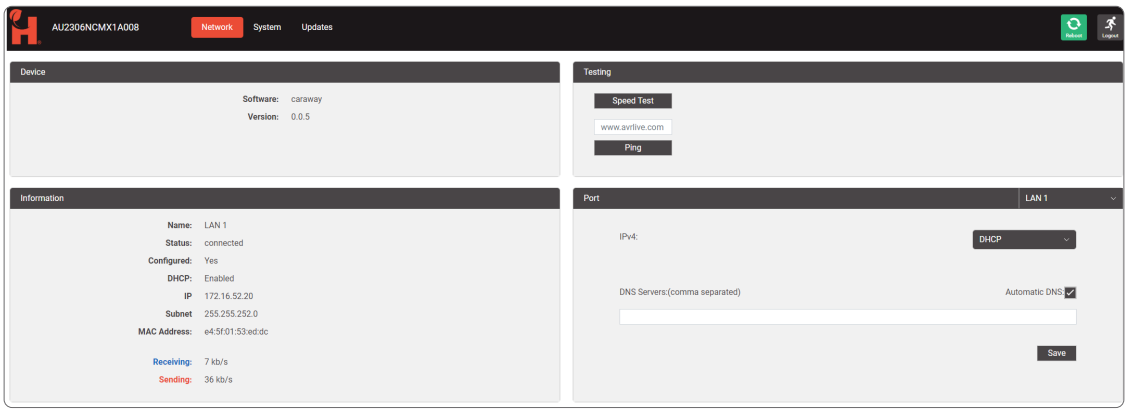
1. Login to the Web Interface.
2. Once logged in, you will notice an orange prompt to configure the MAIN interface.



3. If connected to a DHCP enabled network click save in the "Port" window. Refer to "Port Configuration" on page 7 for configuration of static IP settings.
4. If your device is managed by an Enterprise Server, enter details on the System page. Refer to "Enterprise Server Settings" on page 12.

Network

This section of the Web Interface provides information on device software version, network information, testing , and configuration of device network adapters.



Information

Displays information related to the selected port (port can be selected from the drop down in the “Port” section)

Name
Name of the port

Status
Displays connection status of the port - connected or down (unplugged)

Configured
If "Yes", the port has been configured to either DHCP or manual

SSID (WiFi only)
Displays connected WiFi network SSID

DHCP
Shows if DHCP has been enabled or disabled

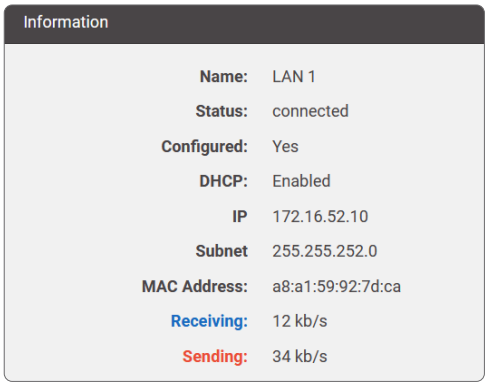
IP
Current port IP address

Subnet
Current port subnet

MAC Address
Port hardware MAC address

Receiving
Live port receiving throughput

Sending
Live port sending throughput



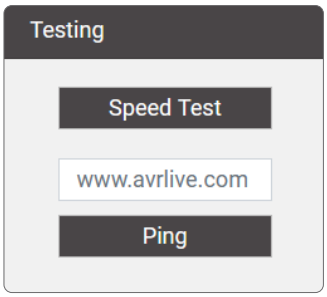
Testing

Helpful network testing tools for confirmation of network settings and capabilities.

Speed Test
For testing available upload and download bandwidth.

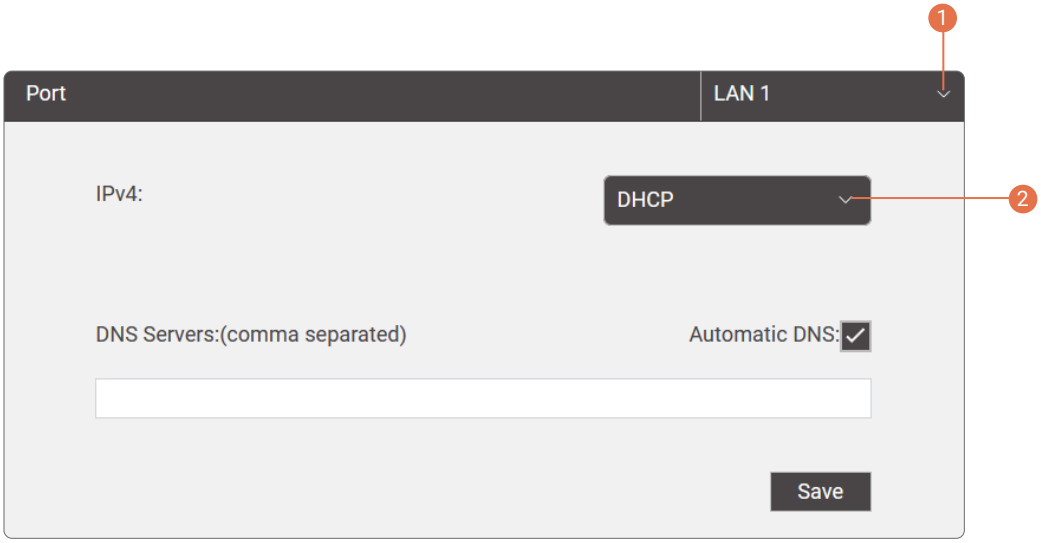
Ping
For testing connection to the Nodestream server (www.avrlive.com) or to confirm connection to other devices on your network

1. Enter IP address to ping.
2. Click Ping button.
3. Notification will display followed by either:
   - Ping time in ms — successful
   - Could not reach the IP address — unsuccessful



Port Configuration

Configuration section for device networks. Ports can be configured to DHCP or Manual (static IP)



1. Port Selection
   Drop down, displays available network ports. Select for configuration.

2. Configuration Type
   Drop down, select either DHCP or manual.

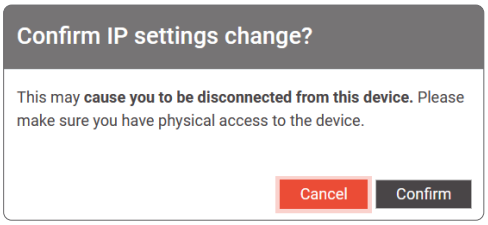
- Only IPv4 networks are supported
- Where an Ethernet and WiFi connection is configured, the device will favor the WiFi connection

Ethernet

1. Select the port you'd like to configure from the "Port" drop down.

DHCP

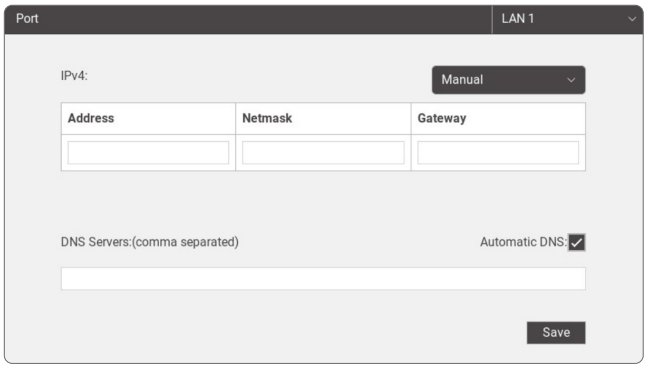
1. Select "DHCP" from the "IPv4" drop down, if not already selected, then save.
2. When prompted, confirm IP settings change. Network setting applied prompt will be displayed.



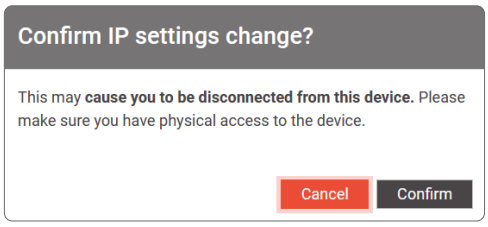
3. Confirm network information is correct.

Manual

1. Select "Manual" from the "IPv4" drop down and enter network details as provided by your Network Administrator, then save.



2. When prompted, confirm IP settings change. Network setting applied prompt will be displayed.

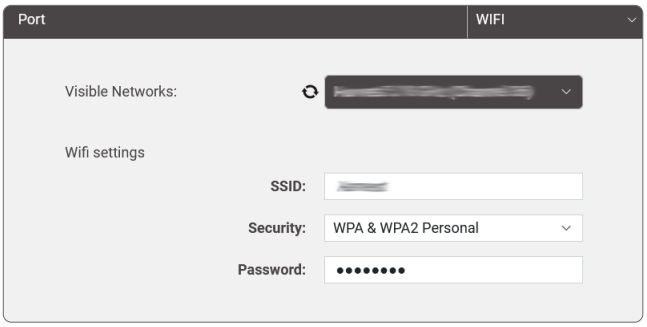


3. Enter the new IP address or http://serialnumber.local in your web browser to log back into the Web Interface.
4. Confirm network information is correct.

WiFi

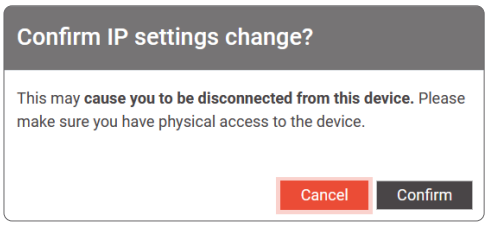
1. Select "WiFi" from the “Port” drop down.
2. Select network from list of available networks from the “Visible Networks” drop down.

3. Confirm security type is correct and enter password.



DHCP

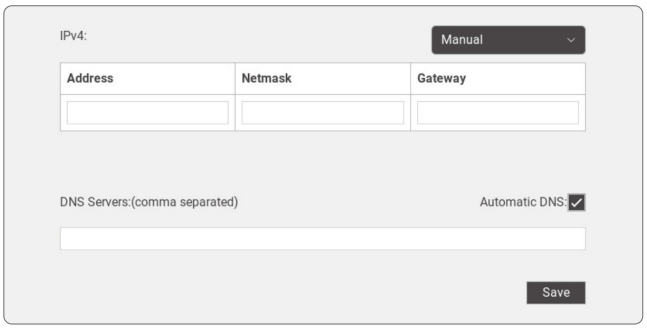
1. Select "DHCP" from the "IPv4" drop down, if not already selected, then save.
2. When prompted, confirm IP settings change, a network setting applied prompt will be displayed.



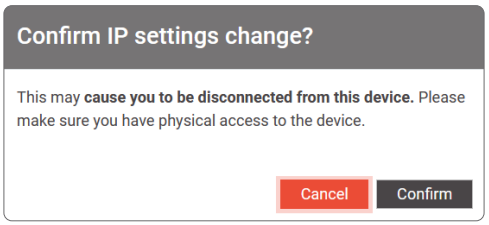
3. Select the WiFi port and confirm network information is correct.

Manual

1. Select “Manual” from the “IPv4” drop down and enter network details as provided by your Network Administrator, then save.



2. When prompted, confirm IP settings change a network setting applied prompt will be displayed.



3. Enter the new IP address in your web browser to log back into the Web Interface.
4. Select the WiFi port and confirm network information is correct.

Disconnect

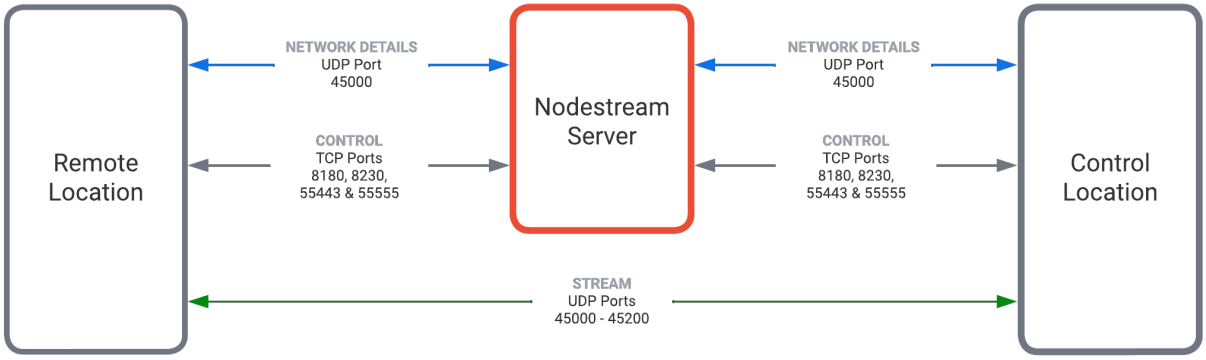
1. Select WiFi from the “port” drop down.
2. Click the “Disconnect” button.

Firewall Settings

It is common for corporate network firewalls/gateways/anti-virus software to have strict rules in place that may require modification to allow Nodestream devices to function.

Nodestream devices communicate with each other via TCP/UDP ports, therefore permanent network rules must be in place as per below:

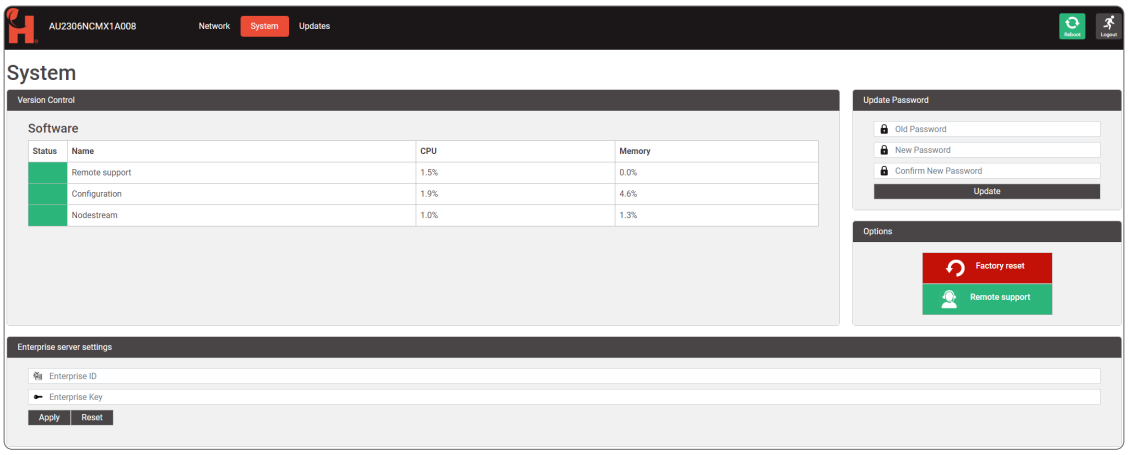
- Protocol is IPv4 ONLY
- Devices must have access to the public network (Internet)
- Inbound/Outbound to Nodestream server:
  - TCP port 55443, 55555, 8180, 8230
  - UDP port 45000
- Devices must be able to send UDP packets between each other in the range of:
  - UDP port: 45000 - 45200



- All traffic is protected with 384-bit encryption
- All port ranges are inclusive
- Contact Harvest support for further information. support@harvest-tech.com.au

System

This section of the Web Interface provides information for software, changing system video modes, Web Interface password management, factory reset, and remote support enable / disable.



Version Control

Displays information relating to software processes and their resource usage. This can be useful in diagnosing software and/or performance issues.

Enterprise Server Settings

Nodestream devices can be managed via the Harvest server or a dedicated "Enterprise Server". If your Nodestream device is managed by an Enterprise Server, you will need to input its details in this section. Contact your company Nodestream administrator for further information.

Update Password

Allows you to change the Web Interface login password. If the password is unknown, perform a factory reset. Refer “Factory Reset” below.

Options

Factory Reset

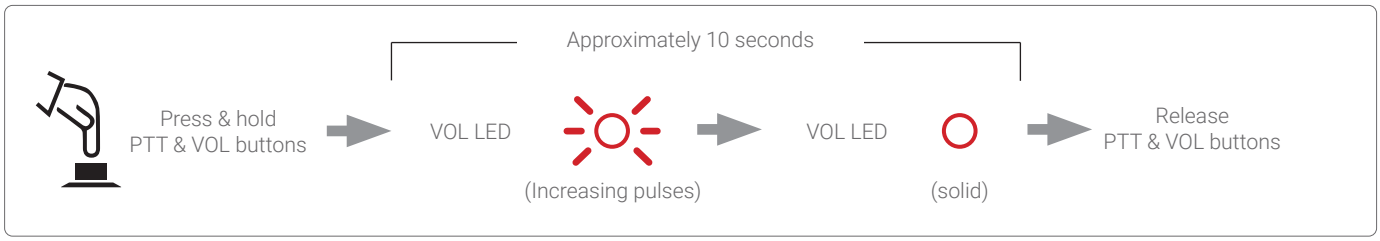
Performing a factory reset of the device will reset:

- Network settings
- Web Interface login password
- Enterprise server settings

To perform a factory reset:

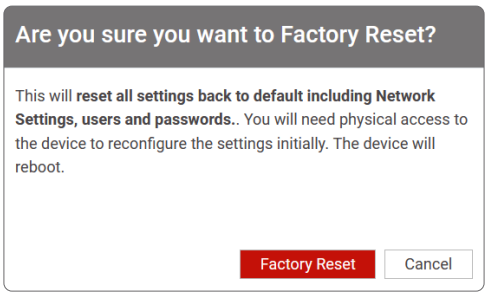
1. Initiate (a or b):

   a. Press and hold the PTT and VOL buttons



   b. Select “Factory Reset” from the System page in the Web Interface. When prompted select Factory Reset to confirm.

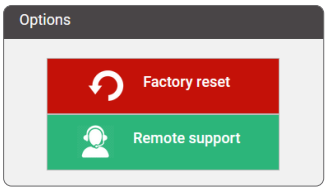
3. Device will reboot.
4. Configure the network or your device. Refer “Initial Configuration” on page 5.



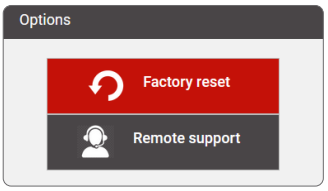
Remote Support

Remote support enables Harvest support technicians to access your device if advanced troubleshooting is required.

To enable/disable remote support, click the “Remote Support" button.



Enabled



Disabled

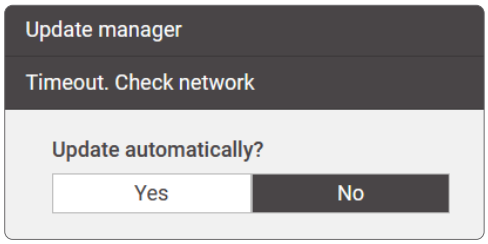
Remote support is enabled by default

Updates

This section of the Web Interface provides control and management of the device update system.

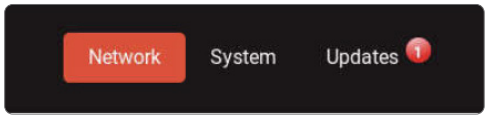
Automatic Updates

Automatic updates are enabled by default, downloading and installation occur in the background. During this process the device may restart. If this is not desired, disable automatic updates by setting "Update automatically?" to No.



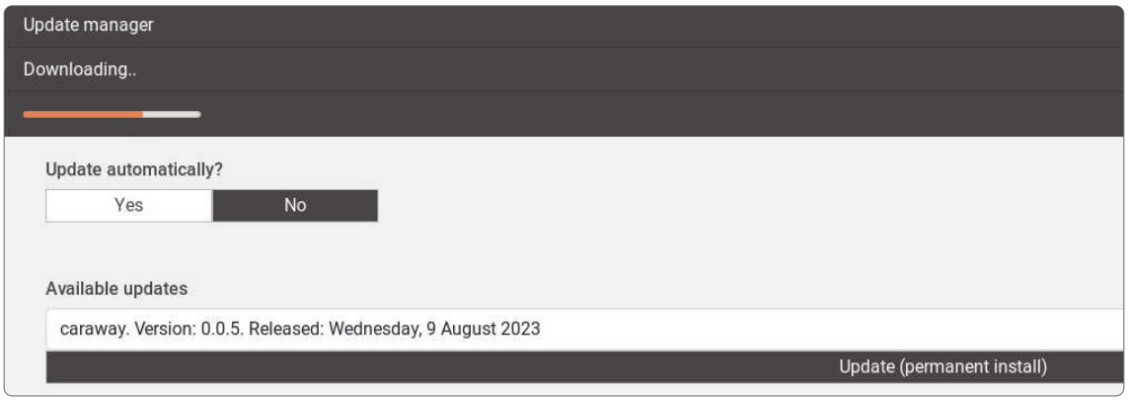
Manual Updates

When an update is available for your device, an icon will be displayed next to the "Updates" tab.



To Install the available update(s):

1. Open the Updates section of the Web Interface.
2. If an update is available it will be shown. If no update is visible, click the "refresh" button to display available updates.
3. Select "Update (permanent install)" and accept the conditions when prompted.
4. The updated manager will proceed to download and install the update.
5. Once the update process is complete your device or the software may restart.



Updates are installed incrementally. When a manual update has completed, continue to refresh the update manager and install updates until your device is up to date.

Operation

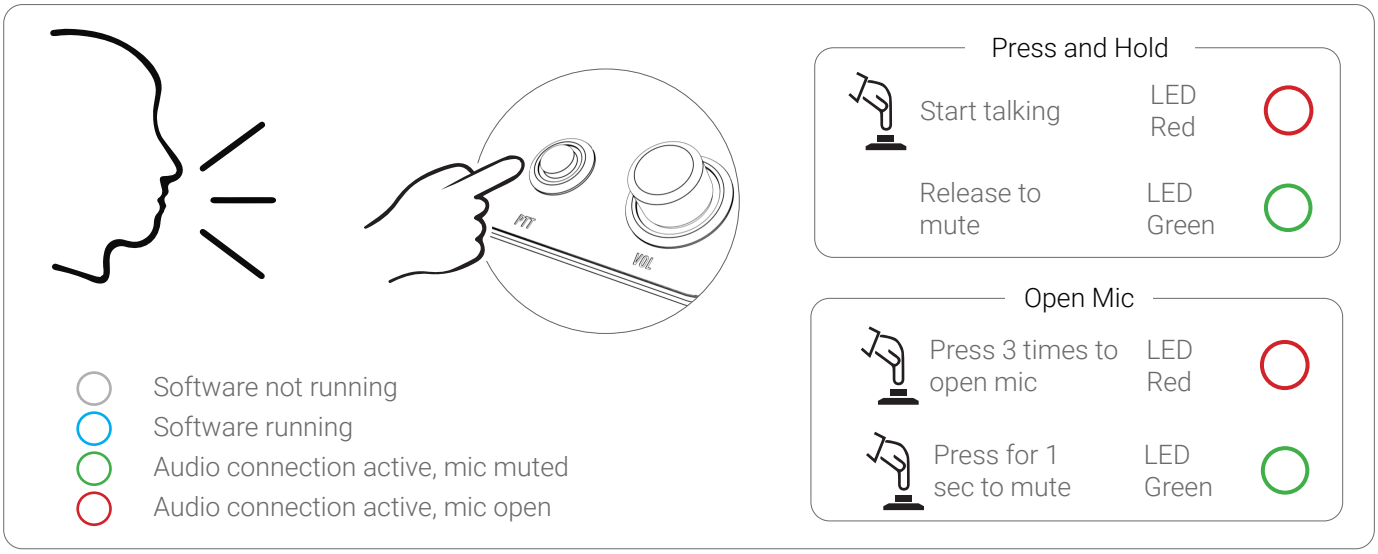
User Interface

Status LED

Displays device power and network status.

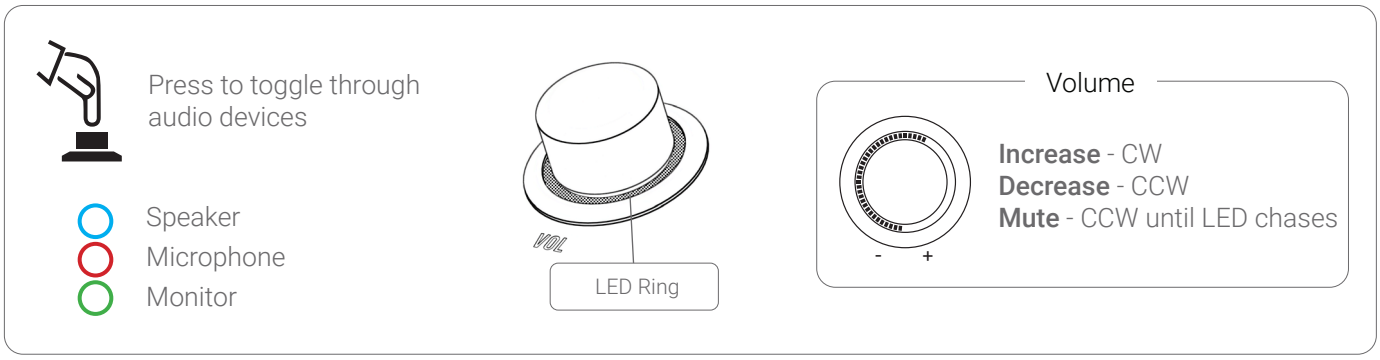
PTT (Push To Talk)

Displays software and connection status and provides control of microphone input. (also used for factory reset)



VOL (Volume)

Provides control of volume and displays current level. (also used for factory reset)

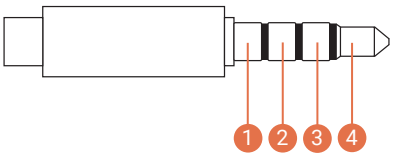


Audio

Nodestream video devices include a single Nodecom audio channel for streaming two-way audio to other Nodestream devices in the your group. The following audio devices are supported:

- USB speakerphone or headset via a USB A accessory port
- Analog input / output via the 3.5mm TRRS jack

1. Mic
2. Ground
3. Speaker Right
4. Speaker Left



Inputs are selected and configured via your Harvest control application.

Control Applications

Nodestream device connections and associated input/output configurations are managed via Harvest control applications.

Nodester

A control only iOS application developed for iPad. Typically used in control applications or when a customer's Nodestream group comprises only of hardware devices.

Nodestream for Windows

Windows Nodestream decoder, encoder, audio, and control application.

Nodestream for Android

Android Nodestream decoder, encoder, audio, and control application.

Nodestream for iOS

iOS Nodestream decoder, encoder, audio, and control application.

Appendix

Technical Specifications

Physical

Physical dimensions (HxWxD)	50 x 120 x 120 mm (1.96" x 4.72" x 4.72")
Weight	475g (1.6lbs)

Power

Input	USB Type C - 5.1VDC
Consumption (operating)	5W typical

Environment

Temperature	Operating: 0°C to 35°C (32°F to 95°F)	Storage: -20°C to 65°C (-4°F to 149°F)
Humidity	Operating: 0% to 90% (non-condensing)	Storage: 0% to 95% (non-condensing)

Interfaces

UI	Status LED PTT button Volume control
Ethernet	10/100/1000 Ethernet port
WiFi	802.11ac 2.4GHz/5GHz
USB	2 x USB Type A 2.0

Included Accessories

Hardware	Jabra Speak 510 USB Speakerphone 20W ACDC PSU USB Type A to C cable @ 1m WiFi Antenna
Documentation	Quick start guide

Troubleshooting

System

Issue	Cause	Resolution
Device not powering	Power source not connected or powered	Confirm PSU is connected to your device and the supply is turned on
Unable to access Web Interface	LAN port settings unknown Network issue Device not powered	Perform a factory reset and re-configure device Refer "Factory Reset" on page 13 Refer "Network" troubleshooting below Confirm device is powered on
Device overheating	Blocked vents Environmental conditions	Ensure device ventilation is not blocked (refer quick start guide) Ensure specified operating conditions are met Refer "Technical Specifications" on page 17
Forgot login and/or network details	N/A	Factory reset device, refer "Factory Reset" on page 13

Network

Issue	Cause	Resolution
LAN(x) (unplugged) message displayed	Network not connected to LAN port Incorrect/inactive port on switch	Check an Ethernet cable is connected Confirm connected port is active and configured
Red Status LED (No connection to server)	Network issue Port not configured Firewall settings	Check an Ethernet cable is plugged in or, Check WiFi is connected to correct network Confirm port configuration is correct Refer "Port Configuration" on page 7 Ensure firewall settings are implemented and correct. Refer "Firewall Settings" on page 11
Unable to see WiFi networks	WiFi antenna not installed No networks in range	Install supplied Wifi antenna Reduce distance to WiFi router/AP

Audio

Issue	Cause	Resolution
No audio input and/or output	Audio device not connected Audio input/output not selected Device muted	Ensure audio device is connected and powered on Select correct input and/or output device in your Harvest control application Confirm device is not muted
Output volume too low	Level set too low	Increase output volume at the connected device or via your Harvest control application
Input volume too low	Level set too low Microphone obstructed or too far away	Increase mic level at the connected device or via your Harvest control application Ensure microphone is not obstructed Decrease distance to microphone
Poor audio quality	Poor cable connection Damaged device or cable Limited bandwidth	Check cable and connections Replace device and/or cable Increase available bandwidth and/or reduce quality setting via Harvest Control Application

User Resources

Contact and Support
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