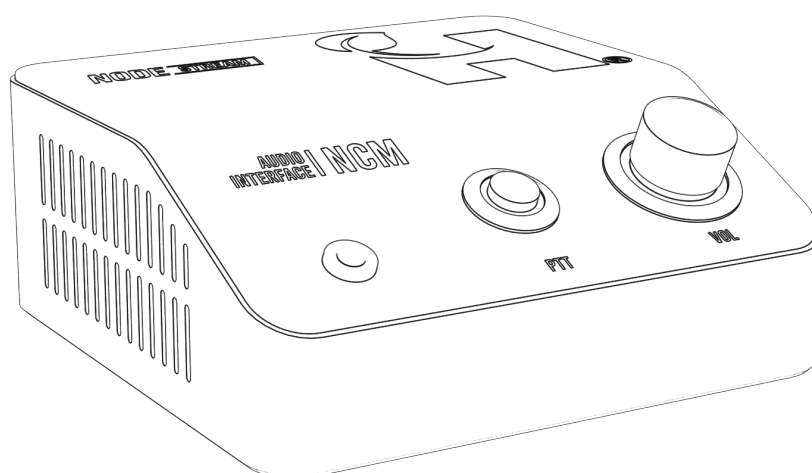# NODESTREAM

NODECOM

User Manual

Please read these instructions carefully before using this product

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⚠️ 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: 0°C to 65°C
  Humidity (non-condensing): Operating: 0% to 90%   Storage: 0% to 90%
- 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.

ℹ️ 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 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

The Nodecom 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.
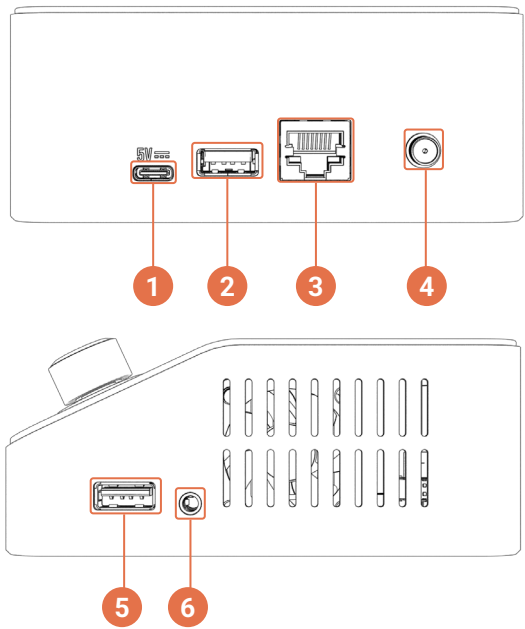
Key Features

- 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
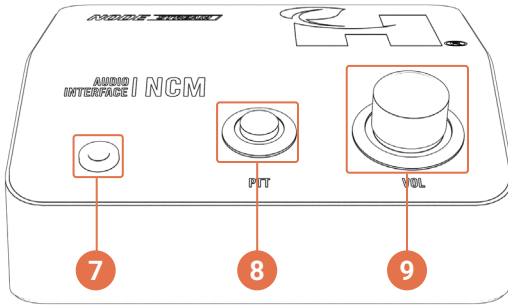
Typical System Setup
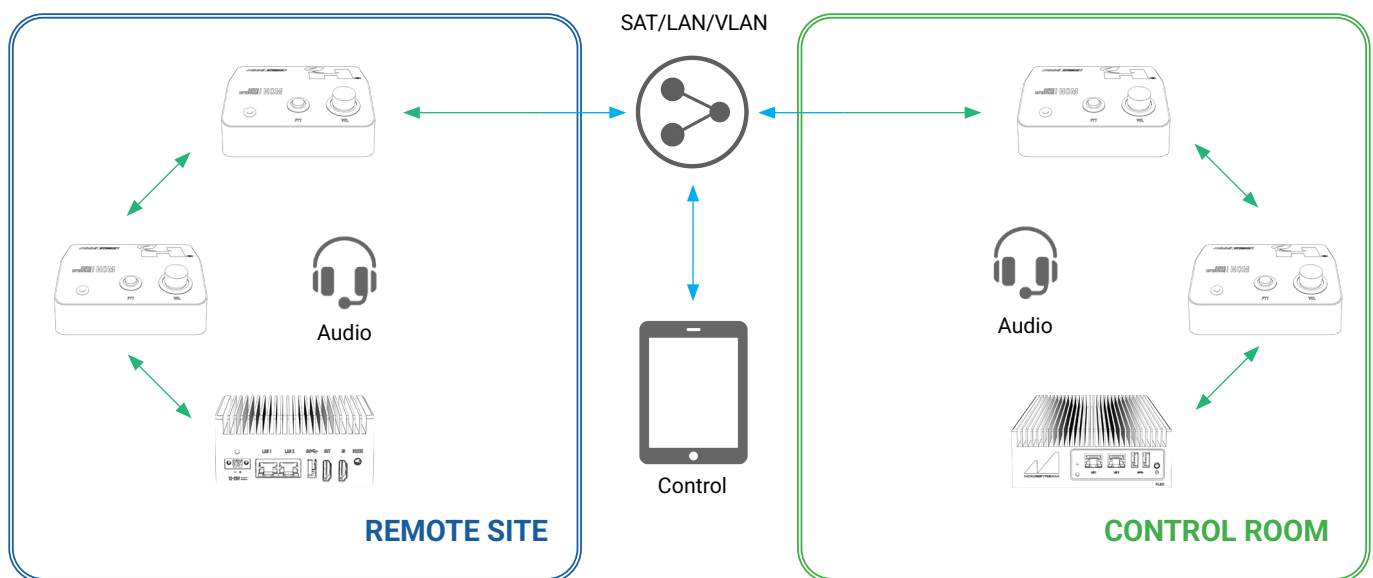
Connections / UI

1 Power Input - USB C
5VDC (5.1VDC preferred)

2 USB A 2.0
Connection of peripherals

3 Ethernet
Gigabit RJ45

4 WiFi Antenna - SMA
For connection of supplied WiFi antenna.

5 USB A 2.0
Connection of peripherals

6 Analog Audio - 3.5mm TRRS
Connection of audio devices.

7 Status LED
RGB LED to indicate system status

BLUE	System starting
RED	Network issue

8 Push to Talk
PTT Button

Press & hold to open mic
Press 3 times to latch open mic

RGB LED

BLUE	No connection
GREEN	Active connection, MIC closed
RED	Active connection, MIC open

9 Volume Control
Press to cycle control modes

BLUE	Speaker
RED	Microphone
GREEN	Monitor

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

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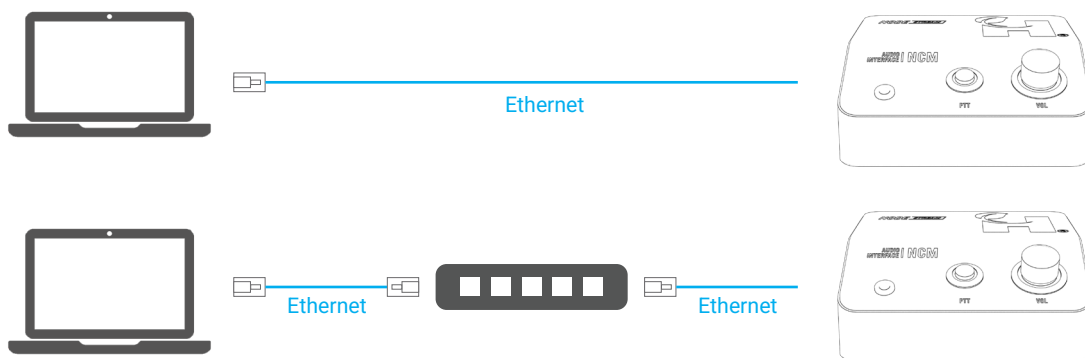
Configuration

Overview

The Web Interface provides details for, and management of;

- Software version information
- Network(s)
- User login credentials

- Remote support
- Server settings
- Updates

Access

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

DHCP Enabled Network

1. Connect your device to your LAN and power it up.

2. From the web browser of a computer connected to the same network, enter the device IP address or http://serialnumber.local , e.g http://au2518ncmx2a014.local

3. When prompted, enter your login details.

> Serial number can be found on the product label, affixed to the underside of your device

Non-DHCP Enabled Network

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

1. Connect 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 enabled network, only 1 device can be configured at a time, due to IP conflicts. Once a device has been configured, it may be left connected to your network.

Initial Configuration

Nodestream devices require the following to be configured prior to operation;

Network(s)   refer below
Server(s)   refer "Server Configuration" on page 9

> The primary network of your Nodestream device must be configured to ensure a stable connection and prevent the device from setting its IP address to its static default.

1. Login to the Web Interface.

2. Once logged in, you will notice an orange prompt to configure the MAIN interface.
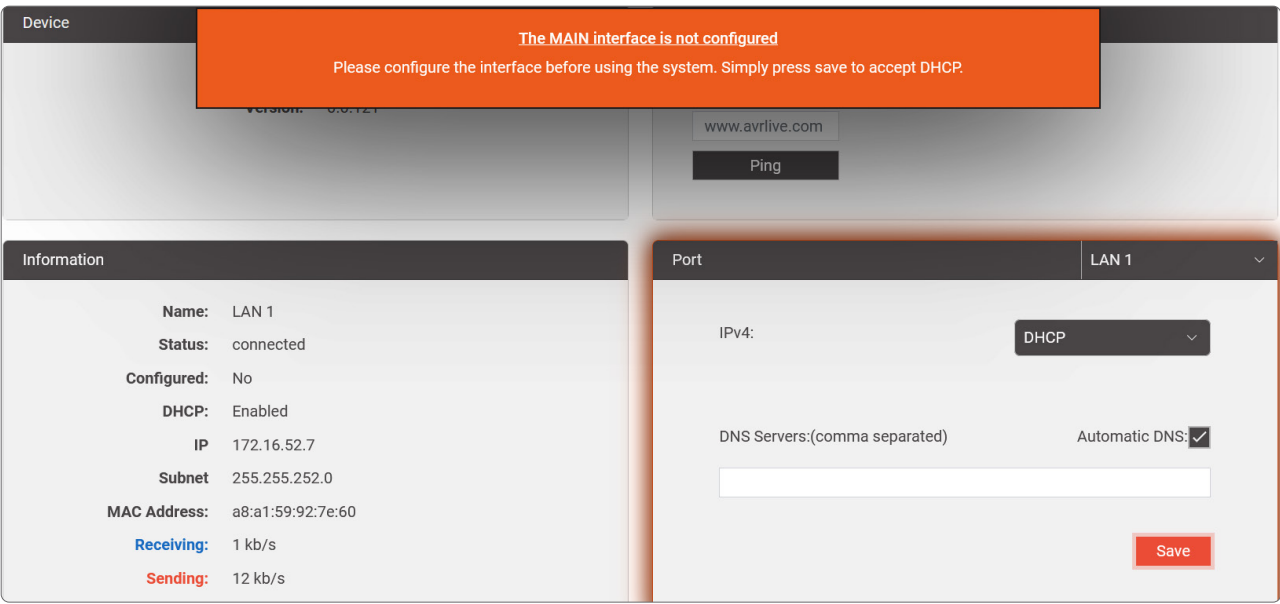
3. If connected to a DHCP enabled network click save in the "Port" window. Refer to "Port Configuration" on page 6 for configuration of static IP settings.

Network
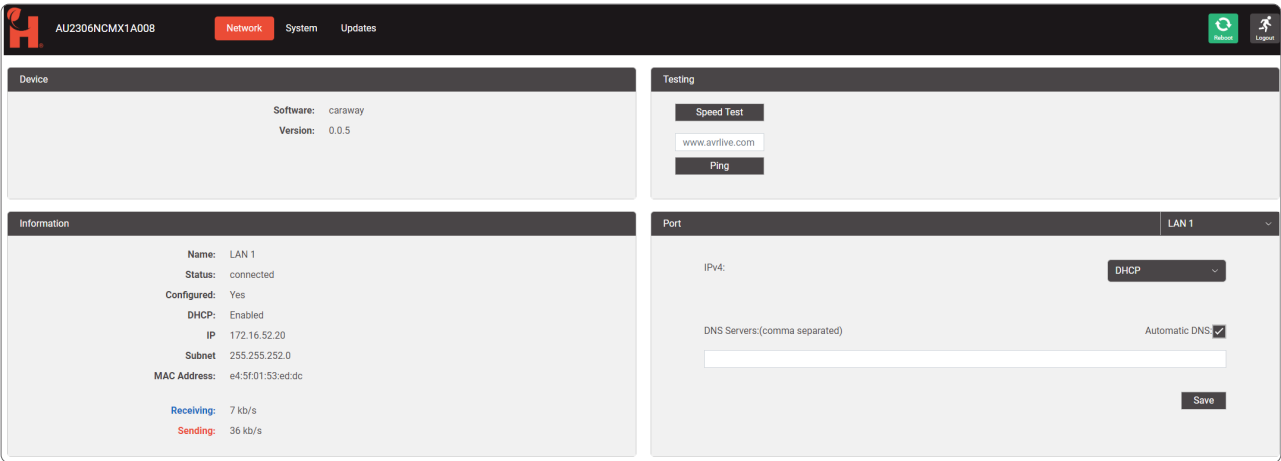
Information

Displays information related to the selected port (select from the drop down in the "Port" section)

Name	Name of the port
Status	Connection status of the port
Configured	Shows if the port been configured
DHCP	DHCP is enabled or disabled
IP	IP address
Subnet	Subnet
Gateway	Gateway
MTU	Set maximum transmission unit
MAC Address	Adapter MAC address
Receiving	Live "receiving" throughput
Sending	Live "sending" throughput

Information

Name:	LAN 1
Status:	connected
Configured:	Yes
DHCP:	Enabled
IP:	172.16.52.13
Subnet:	255.255.252.0
Gateway:	172.16.52.1
MTU:	1500
MAC Address:	48:b0:2d:93:41:77
Receiving:	0 kb/s
Sending:	0 kb/s

Testing

Ping

Test connection to your Nodestream X server or other devices on your network, i.e. IP cameras.

1. Enter IP address you'd like to test
2. Click "Ping" button
3. Notification will display followed by either
   - Ping time in ms   successful
   - Could not reach the IP address   unsuccessful

Testing

Ping

49.255.83.194

Nodestream X Network

Nodestream X Network

When operating in Nodestream X modes, test if all network requirements are in place to allow your device to function correctly. The following tests are performed to your Nodestream Server;

1. Ping test to the server
2. TCP port test
3. TCP STUN test
4. UDP port test

- Nodestream X Server configuration required, refer "Server Configuration" on page 9
- Nodestream devices require Firewall rules to be in place, refer "Firewall Settings" on page 7

Port Configuration

Ethernet

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.

Manual

1. Select "Manual" from the "IPv4" drop down.

2. Enter network details as provided by your Network Administrator, then click save.

3. When prompted, confirm IP settings change.

4. To log back into the Web Interface, enter the new IP address or http://serialnumber.local in your web browser.

WiFi

1. Select "WiFi" from the "Port" drop down.

2. Select network from list of available networks from the "Visible Networks" drop down.

3. Select security type and enter password.

4. Click save for DHCP or select "Manual", enter port details as provided by your Network Administrator then click save.

Disconnect

1. Select WiFi from the "Port" drop down.

2. Click the "Disconnect" button.

- Only IPv4 networks are supported
- LAN 1 MUST be used for Nodestream traffic. LAN 2 is used for connecting to separate network stream inputs

⚠️ Were a non-default MTU is set for a port, you MUST re-enter the value when changing port settings for the value to be retained.

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 X devices communicate with the server and each other via TCP/UDP ports, therefore the following permanent network rules for all inbound & outbound traffic must be in place:

Ports

TCP	8180, 8230, 45000, 55443 & 55555
UDP	13810, 40000 & 45000 - 45200
Server	access to IP address

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

Discovery

Access Nodestream Devices

Nodestream devices connected to the same network as your device will display. Click the ➡ icon next to the Device IP to open its Web Interface in a new window.

Copy Nodestream X Server Details

To copy the Nodestream X server details from another device;

1. Click the ⬆ icon of the device server details you'd like to copy.
2. Confirm the action.
3. Nodestream X software will restart and connect to the new server.

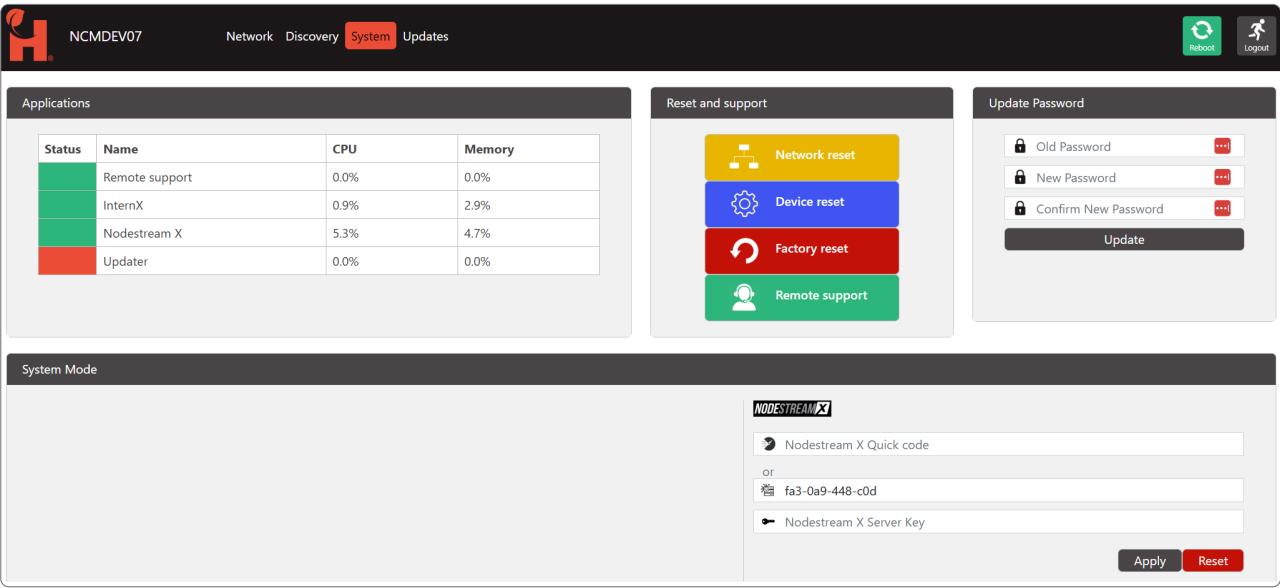### Access Nodestream X Server

To access the Nodestream X server web interface, click the ➡ icon next to the Nodestream X Server IP.

System

Applications

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

Reset and Support

Network Reset   Resets all network settings to default.

Device Reset   Resets all application and server settings to default

Factory Reset   Resets ALL device settings to default (alternatively, use the reset button, see below)
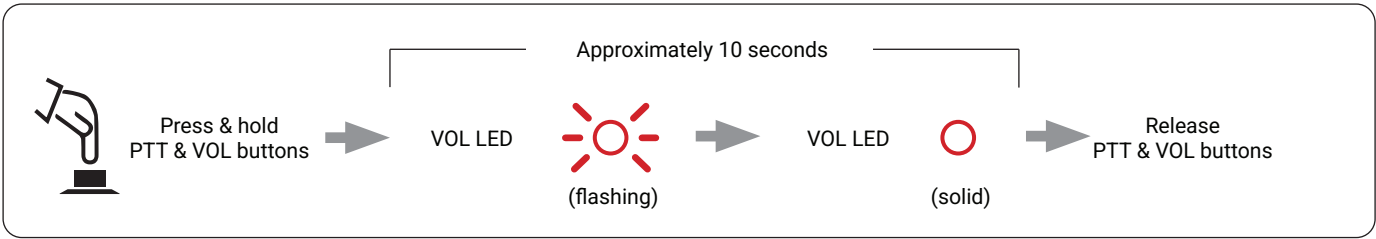
Remote Support   Remote support enables Harvest support technicians to access your device if advanced troubleshooting is required. To enable/disable, click the "remote support" button.

> Remote support is enabled by default

Update Password

Allows you to change the Web Interface login password. If the password is unknown, perform a factory reset. Refer "Reset and Support" above.

Server Configuration

All Nodestream devices require configuration to a server for connection and settings management.

Enter the "quick code" or Server ID and Key provided by your Nodestream Administrator, then click "Apply".

Once a device has been registered to a server, your Nodestream Administrator will need to add the device to a group within the server before it can be used.

Updates

Automatic Updates

Automatic updates are disabled by default. Enabling this feature allows the device to download and install software when a newer version is available. During this process the device may restart. If this is not desired, set 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. Select "Update (permanent install)" and accept the conditions when prompted.
3. The updated manager will proceed to download and install the update.
4. 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.

- 🔵 Power on
- 🔴 Network issue

PTT (Push To Talk)

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

- ⚪ Software not running
- 🔵 Software running
- 🟢 Audio connection active, mic muted
- 🔴 Audio connection active, mic open

Press and Hold

🎤	Start talking	LED Red 🔴
🎤	Release to mute	LED Green 🟢

Open Mic

🎤	Press 3 times to open mic	LED Red 🔴
🎤	Press for 1 sec to mute	LED Green 🟢

VOL (Volume)

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

🎤 Press to toggle through audio devices

- 🔵 Speaker
- 🔴 Microphone
- 🟢 Monitor

LED Ring

Volume

**Increase** - CW
Decrease - CCW
Mute - CCW until LED chases

- +

Nodestream Audio

Connection of up to 10 Nodestream audio enabled devices our your Nodecom allows for simple 2-way audio or complex communication networks within and/or between locations. Connection and settings management is performed via your Harvest Control application.

Quality	Set to desired quality of audio, higher quality will demand higher bitrates
Speaker	Select your audio output device.
Microphone	Select your audio input device
Monitors	Us if you'd like to output the audio to a secondary device
Passthrough	When enabled, passthrough allows audio from other devices to "passthrough" your device. Use to control which devices can communicate with each other.

Device A in the diagram below;

> Passthrough disabled = B&C can only communicate with A
>
> Passthrough enabled = All devices can communicate
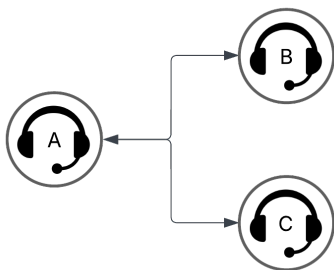
> - Where there is no input to your microphone, or the device is muted, no data is transferred
> - If your audio device is not shown, click "sync audio devices"

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 customers Nodestream group comprises only of hardware devices.

Nodestream for Windows

Windows Nodestream decoder, 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: 0°C to 65°C (32°F to 149°F)
Humidity	Operating: 0% to 90% (non-condensing)	Storage: 0% to 90% (non-condensing)

Interfaces

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 PSU USB Type A to C cable @ 1m WiFi Antenna
Documentation	Quick start guide

Certification

Certification	RCM, CE, UKCA, FCC

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	Perform a factory reset and re-configure device Refer "Reset and Support" on page 8
	Network issue	Refer "Network" troubleshooting below
	Device not powered	Confirm device is powered on
Device overheating	Blocked vents	Ensure device ventilation is not blocked (refer quick start guide)
	Environmental conditions	Ensure specified operating conditions are met Refer "Technical Specifications" on page 12
Forgot login and/or network details	N/A	Factory reset device, refer "Reset and Support" on page 8

Network

Issue	Cause	Resolution
Red Status LED (No connection to server)	Network issue	Check an Ethernet cable is plugged in or, Check WiFi is connected to correct network
	Port not configured	Confirm port configuration is correct Refer "Port Configuration" on page 6
	Firewall settings	Ensure firewall settings are implemented and correct. Refer "Firewall Settings" on page 7
Unable to see WiFi networks	WiFi antenna not installed	Install supplied Wifi antenna
	No networks in range	Reduce distance to WiFi router/AP

Audio

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

User Resources

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