

RS32

User Manual

Pre Production

V0.01b

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Manufacturer's CE Declaration of Conformity

Manufacturer Identification

Legal Name: Nixer Ltd
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Representative: Nick Fletcher
 Function: CEO/CTO

Product: RS32 - Audio over Ethernet Switch
 Brand: Nixer
 Model: RS32
 CE Affixing Date: xx.xx.2022

Declaration:

Provided that it is installed, maintained, and used in the application for which it is made, with respect of the professional practices, relevant installation codes and manufacturer's

We hereby declare, under our sole responsibility, that the above referenced product complies with the essential requirements of Council Directives 2004/108/EC (EMC), 2006/95/EC (LVD) and 2011/65/EC (ROHS)

instructions:

European harmonized standards applied:

EMC	Emission	EN 61000-6-3:2007-10-01: EN55022:2007-06-01, Class B wireless, EN 55022:2007-06-01, wired
	Immunity	EN 61000-6-1:2007-12-01: EN 61000-4-2 + A1+A2: 2002-02-01, EN 61000-4-3: 2007-11-01, EN 61000-4-4: 2005-09-01, EN 61000-4-5:2007-08-01, EN 61000-4- 6+A1:2002-02-01,
Product safety:		2006/95/EG
ROHS:		

Signature of manufacturer's representative:


 Nick Fletcher

Important Safety Information

CAUTION: These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the User Manual unless you are qualified to do so. Refer all servicing to qualified service personnel.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water. Do not expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on this apparatus.
- Clean only with a dry cloth.
- Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install or use near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- Only use attachments/accessories specified by the manufacturer.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- To completely disconnect mains power from this apparatus, the power supply cord must be unplugged.

For US and CANADA only:

Do not defeat the safety purpose of the grounding-type plug. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of an uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

General Precautions

- Do not place heavy objects on the RS32, expose it to sharp objects or handle it in any way that may cause damage, e.g., rough handling and/or excessive vibration.
- Do not subject the equipment to dirt, dust, heat or vibration during operation or storage. Never expose the console to rain or moisture in any form. Should the unit become wet, turn it off and disconnect it from the power source without further delay. The equipment should be given sufficient time to dry out before recommencing operation.
- When cleaning the RS32, never use chemicals, abrasive substances or solvents.
- The front panel should be cleaned using a soft brush and a dry lint-free cloth. For persistent marks, use a soft cloth and isopropyl alcohol.
- Keep these instructions for future reference. Follow all warnings in this manual and those printed on the unit.
- The RS32 must be connected following the guidance in this manual. Never connect power amplifier outputs directly to the RS32. Connectors and plugs must never be used for any other purpose than that for which they are intended.
- The equipment must be powered from an appropriate source which can be via either of the mains inputs. Use both inputs for redundancy purposes.
- The RS32 must not be operated inside a case or enclosed as the housing acts as a heatsink for the components inside.
- Refer servicing to qualified technical personnel only.

Introduction

Thank you for purchasing your new Nixer RS32 audio network switch. This unit has been designed to make it convenient and easy to switch audio signals within Dante networks without having to change subscriptions. Operation is via it's clear and simple to use touchscreen interface and it is housed in a compact and robust case.

RS32-000307	Mic rack	Another rack	NAME 13	NAME 14	NAME 15	NAME 16	NAME 17	NAME 18
P S 48k R	1 - 4	5 - 12	13	14	15	16	17	18
EDIT	NAME 19	NAME 20	NAME 21	NAME 22	NAME 23	NAME 24	NAME 25	NAME 26
	19	20	21	22	23	24	25	26
SYS	NAME 27	NAME 28	NAME 29	NAME 30	NAME 31	NAME 32		
	27	28	29	30	31	32		
LOCK								

The RP32 is a 32-way digital switch with 64 digital inputs and 64 digital outputs. Switches can be configured as either 2 inputs to 1 output changeover or 1 input to 2 outputs changeover. They can be selected individually or linked together to make larger switches up to a maximum of 32 ways.

Any switch can be activated by the intuitive touchscreen interface.

At time of purchase, it can be specified with either a Dante or Ravenna interface.

Switches operate almost instantaneously and negate the need of having to use a laptop and a controller program and the inherent delays these bring.

The RS32 is a compact 1U module with a size of 44mm height, 483mm width (inc. rack ears) and 120mm depth

It features a large letterbox 6.6" diagonal (168mm) 1440 x 240 24-bit colour LCD and capacitive touch panel for display and control

Welcome and Unpacking

Thank you for purchasing a RS32

Please take care when unpacking your product

In the box, you will find

- the RS32
- Quick Start Guide

Check that all the parts are present and in good condition

Please contact your retailer immediately should anything be incorrect

Quick Start Guide

Once you have unpacked your RS32 you can follow this quick guide to get you started using it.

Firstly, you will need to download and install a copy of Dante Controller onto your PC/Mac

You can download this from

<https://www.audinate.com/products/software/dante-controller>

Next plug your RS32 into your network with an RJ45 patch lead.

If you have plugged into a PoE enabled router/port you will see the splash screen on the RS32 appear after a couple of seconds.

If you do not have a PoE port, then you will need to plug in a 24V DC supply with a 2.5mm barrel connector (not supplied but can be separately)

Note it is possible to plug in both a PoE supply and the external DC supply at the same time for PSU redundancy.

The optional NIX00583 or the NIX00629 can be used to power the RS32.

Once plugged in and power applied the splash screen on the RS32 appear after a couple of seconds.

After the RS32 has booted you will be presented with the main screen.

If you have a valid network connection the status light in the top left side of the screen next to the P (primary) will turn green.

At this point start Dante Controller on your PC/Mac and you will see your RS32 appear in the list of devices.

You will then be able to select sources and destinations for your RS32.

For more advice on using Dante Controller please visit the Audinate Website

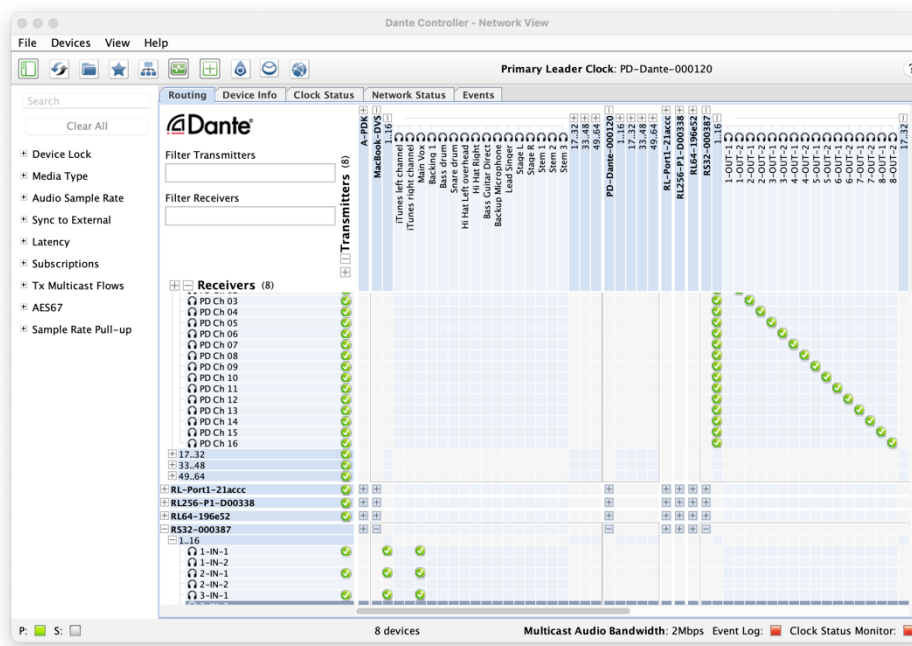
Once you have done this you will be able to start using your RS32 via the touch screen interface.

Please take the time to register your RS32 here

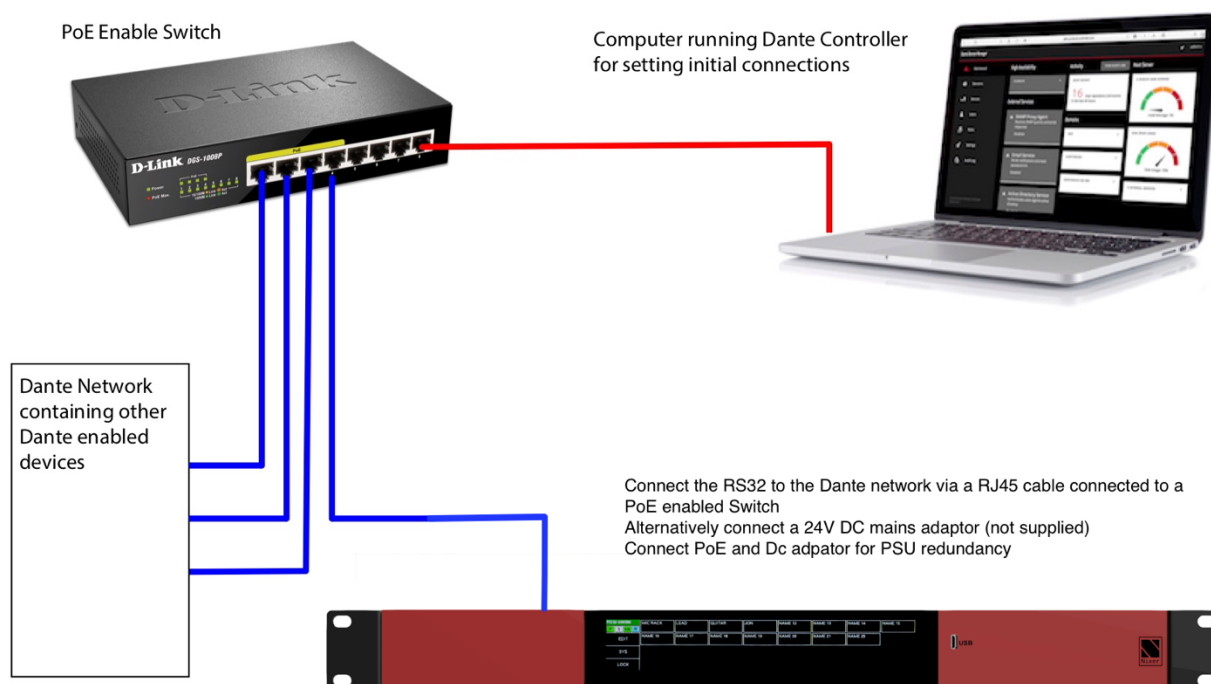
<http://www.nixerproaudio.com/Registration/registration.php>

Once you have registered you will be full access to download the User Manual and any software updates available for your RS32.

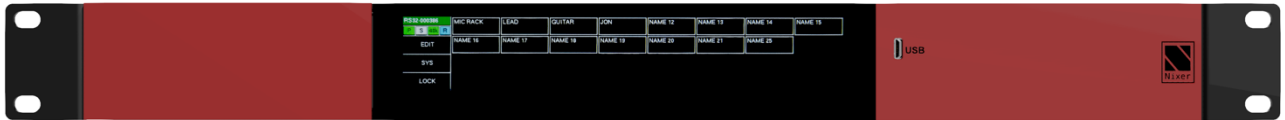
View of Dante Controller with RS32 connected



Basic RS32 connection diagram



RS32 Front View



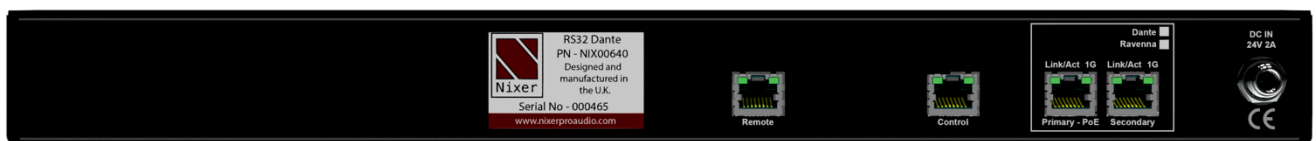
The RS32 Dante is operated and controlled via the large letterbox 6.6" diagonal (168mm) 1440 x 240 24-bit colour LCD and capacitive touch panel.

A simple and elegant menu system has been designed to be intuitive to navigate allowing the user to access all the features of the RS32 Dante very quickly.

The high-resolution screen is easy to read presenting comprehensive metering, routing and status information to the user.

Firmware updates of the RS32 Dante are achieved via a dedicated USB micro AB connector on the front panel.

Rear View



On the rear of the RS32 unit there is a Primary and Secondary port for the AoIP input.

The Control RJ45 allows the RS32 to be remotely controlled via OSC.

The Remote RJ45 is a bespoke remote-control port for additional accessories (note it is not compatible with ethernet)

The RS32 Dante can be powered via PoE on the Primary port or alternatively via 2.5mm DC input connector and requires powering via an external (not supplied) 24V 2Amp DC adaptor.

Both PoE and the external adaptor can be used simultaneously for redundancy.

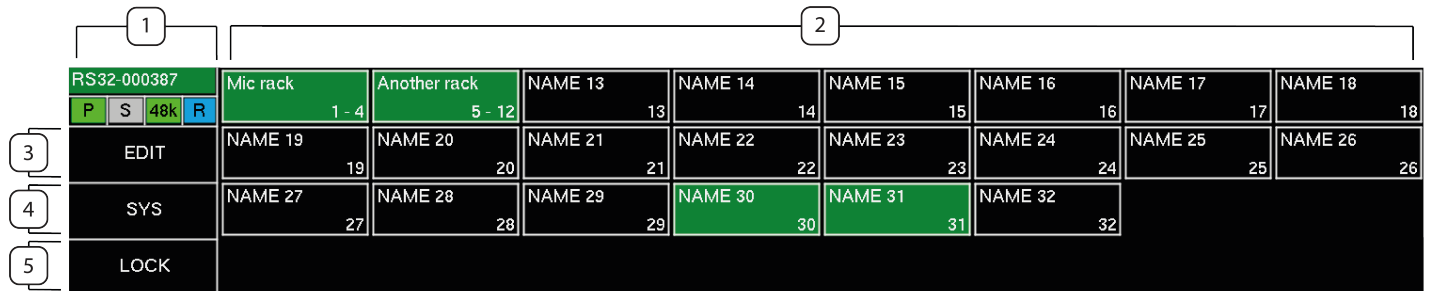
The optional NIX00583 or the NIX00629 can be used to power the RS32.

Power

Firstly, connect the RS32 Primary port to a Dante Network via a PoE enabled Switch. You will see the RS32 splash screen which will give information on the Firmware version and FPGA version.

After a few seconds, you will see the main input screen shown on the next page

RS32 Software



Main Input Screen

The screen is mapped into 36 cells (9 x 4)

1. This section displays info and status of the RS32.
 - a. Top lines shows the product name RS32 and the product serial number
 - i. Username can be set via a PD Dante or DC on the Dante network.
 - b. Bottom line shows the status of the unit.
 - i. P – the primary port Green = active at 1Gbs (Orange =100Mbs, Grey no connection)
 - ii. S – the secondary port Green = active at 1Gbs (Orange =100Mbs, Grey no connection)
 - iii. Sample rate setting 48k or 96k.
 - iv. R – remote port connection. Green = active and remote device attached. Red = active but incompatible remote attached (grey no connection)
2. Grid of 32 cells 8 x 4 representing the 32 switches
 - a. The top left of each switch will say “NAME XX” but can be edited to display a User Defined Name instead via the Edit Menu.
 - b. Each switch is a basic 1 pole changeover switch, which can be configured as 2 in 1 out or 1 in 2 out on a switch-by-switch basis.
 - i. Off (black background) switch is in the normally closed position.
 - ii. ON (green background) switch is in the normally open position.
 - c. Switches can be linked together, and this is indicated in the bottom left corner of the switch for example 1-4 indicates switches 1 to 4 have been linked and will be operated by one button.
3. Edit – pressing this opens the edit screen where multipole switches can be configured, Switch direction changed, and names can be set.
4. Sys – pressing Sys will open the Sys Menu.
5. Lock
 - a. This switch is active when the background is red.
 - b. To activate the lock press this switch.
 - c. To deactivate the lock press and hold for 3 seconds.
 - d. When the Lock is active all presses to the screen will be ignored apart from the deactivate function described above.

- e. The Sys menu can still be accessed but can only be viewed and no setting can be changed.
6. The RS32 holds a constant memory of its current settings including Grouping, Names, Switch type and Switch status (On or Off) so after powering the unit down or in the event of an interruption of power the unit will restart in the same state as it was prior to the powerdown.

The Edit Menu

Pressing the Edit button opens the Edit Menu

	NAME1 1->2 1	NAME 2 1->2 2	NAME 3 1->2 3	NAME 4 1->2 4	NAME 5 1->2 5	NAME 6 1->2 6	NAME 7 1->2 7	NAME 8 1->2 8
Set Type	NAME 9 1->2 9	NAME 10 1->2 10	NAME 11 1->2 11	NAME 12 1->2 12	NAME 13 1->2 13	NAME 14 1->2 14	NAME 15 1->2 15	NAME 16 1->2 16
Edit Name	NAME 17 1->2 17	NAME 18 1->2 18	NAME 19 2->1 19	NAME 20 1->2 20	NAME 21 1->2 21	NAME 22 1->2 22	NAME 23 1->2 23	NAME 24 1->2 24
X	NAME 25 1->2 25	NAME 26 1->2 26	NAME 27 1->2 27	NAME 28 1->2 28	NAME 29 1->2 29	NAME 30 1->2 30	NAME 31 1->2 31	NAME 32 1->2 32

The Edit Menu presents a 8 x 4 matrix of switches

1. Each Switch displays
 - a. Top left the Name of the Switch defaults to "NAMEX" where X is the number of the Switch.
 - b. Bottom left "1 to 2" or "2 to 1" to indicate the Switch type.
 - i. "1 to 2" is a Switch with 1 input and two outputs.
 - ii. "2 to 1" is a Switch with 2 inputs and 1 output.
 - c. Bottom right is the Switch number.
 - d. To select a Switch, press the desired cell and the Switch will turn grey

	NAME1 1->2 1	NAME 2 1->2 2	NAME 3 1->2 3	NAME 4 1->2 4	NAME 5 1->2 5	NAME 6 1->2 6	NAME 7 1->2 7	NAME 8 1->2 8
Set Type	NAME 9 1->2 9	NAME 10 1->2 10	NAME 11 1->2 11	NAME 12 1->2 12	NAME 13 1->2 13	NAME 14 1->2 14	NAME 15 1->2 15	NAME 16 1->2 16
Edit Name	NAME 17 1->2 17	NAME 18 1->2 18	NAME 19 2->1 19	NAME 20 1->2 20	NAME 21 1->2 21	NAME 22 1->2 22	NAME 23 1->2 23	NAME 24 1->2 24
X	NAME 25 1->2 25	NAME 26 1->2 26	NAME 27 1->2 27	NAME 28 1->2 28	NAME 29 1->2 29	NAME 30 1->2 30	NAME 31 1->2 31	NAME 32 1->2 32

2. Set Type
 - a. Select a Switch so that it turns grey then press Set type to toggle between "1 to 2" and "2 to 1"
3. Edit Name
 - a. Select a Switch so that it turns grey and then press Edit Name the following window will appear.

Edit Name for Switch 1

NAME1_

Update

X

4. Use the keyboard to change the Switch name and press Update when finished.

5. To create a group of Switches, select the first Switch in the desired group and the last Switch desired.
6. A button labelled Group will appear in the cell above Set Type.

Group	NAME1 1->2 1	NAME 2 1->2 2	NAME 3 1->2 3	NAME 4 1->2 4	NAME 5 1->2 5	NAME 6 1->2 6	NAME 7 1->2 7	NAME 8 1->2 8
Set Type	NAME 9 1->2 9	NAME 10 1->2 10	NAME 11 1->2 11	NAME 12 1->2 12	NAME 13 1->2 13	NAME 14 1->2 14	NAME 15 1->2 15	NAME 16 1->2 16
Edit Name	NAME 17 1->2 17	NAME 18 1->2 18	NAME 19 2->1 19	NAME 20 1->2 20	NAME 21 1->2 21	NAME 22 1->2 22	NAME 23 1->2 23	NAME 24 1->2 24
X	NAME 25 1->2 25	NAME 26 1->2 26	NAME 27 1->2 27	NAME 28 1->2 28	NAME 29 1->2 29	NAME 30 1->2 30	NAME 31 1->2 31	NAME 32 1->2 32

7. Press Group and a confirmation window will appear, press Yes to create the Switch group.

Group	NAME1 1->2 1	NAME 2 1->2	Group Switches 1 to 4 ? No Yes					NAME 8 1->2 8
Set Type	NAME 9 1->2 9	NAME 10 1->2						NAME 16 1->2 16
Edit Name	NAME 17 1->2 17	NAME 18 1->2						NAME 24 1->2 24
X	NAME 25 1->2 25	NAME 26 1->2						NAME 32 1->2 32

8. Once created the Switch group will displayed as per the screen shot below.

	NAME1 1->2 1 - 4	NAME 2 1->2	NAME 3 1->2	NAME 4 1->2	NAME 5 1->2 5	NAME 6 1->2 6	NAME 7 1->2 7	NAME 8 1->2 8
Set Type	NAME 9 1->2 9	NAME 10 1->2 10	NAME 11 1->2 11	NAME 12 1->2 12	NAME 13 1->2 13	NAME 14 1->2 14	NAME 15 1->2 15	NAME 16 1->2 16
Edit Name	NAME 17 1->2 17	NAME 18 1->2 18	NAME 19 2->1 19	NAME 20 1->2 20	NAME 21 1->2 21	NAME 22 1->2 22	NAME 23 1->2 23	NAME 24 1->2 24
X	NAME 25 1->2 25	NAME 26 1->2 26	NAME 27 1->2 27	NAME 28 1->2 28	NAME 29 1->2 29	NAME 30 1->2 30	NAME 31 1->2 31	NAME 32 1->2 32

9. The first Switch will be displayed in white and will display the switches grouped together with it in the bottom right corner. In the example above 1-4 are grouped together. The three switches also included in the group will be displayed in dark grey.
10. To Ungroup Switches press a Grouped switch and the Ungroup button will appear above the Set Type button. Press Ungroup and a confirmation window will appear, simply press yes to Ungroup the selected Group.

The System Menu

Pressing the Sys button opens the System Menu

The System Menu consists of several tabs

- Network
- Firmware
- Power
- System

Network

Network	Network : Primary	Secondary
Firmware	IP address : 192.168.0.36	- . - . - .
Power	Mask IP address : 255.255.255.0	- . - . - .
System	Gateway IP address : 192.168.0.1	- . - . - .
	Speed : 1000 Mbits/sec	0 Mbits/sec
	Unit Type : Dante	

Network connection parameters are displayed on this page

- Primary Connection
 - IP Address
 - Mask IP Address
 - Gateway IP Address
 - Network Speed
- Secondary Connection
 - IP Address
 - Mask IP Address
 - Gateway IP Address
 - Network Speed

Firmware

Network	Brooklyn II Card	
Firmware	S/W version : 4.2.3 - build 13	Jump to Boot-Loader
Power	State Monitor version : 3.00	
System	CPU	FPGA DSP
	Oct 26 2022 10:34:33 - Version 0.01b	0.02b 0.00

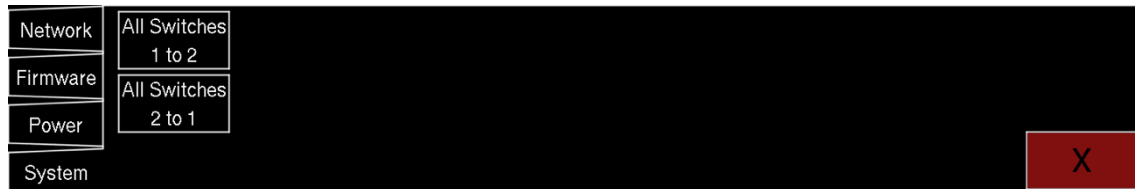
Firmware versions are displayed on this page

- Brooklyn II Card firmware(s)
- RS32 firmware and FPGA version
- Jump to Boot-Loader – enters the RS32 into update mode please read section called Update for more information

Power

This page is TBC

System



System setting are displayed and set from this page

- All Switches 1 to 2
 - Makes all the switches into 1 to 2 switches
- All Switches 2 to 1
 - Makes all the switches into 2 to 1 switches

Control Port

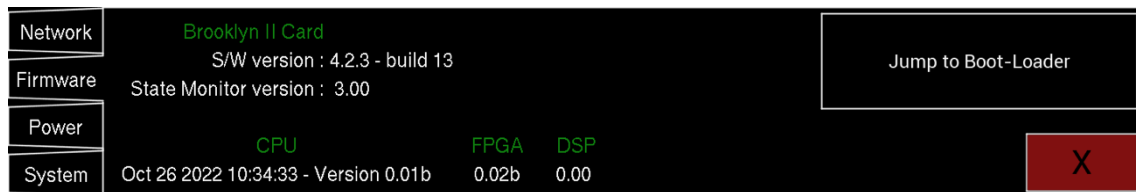
Single RJ45 - This is a standard 100MBs ethernet connection.
It will allow the remote control of the RS32 via OSC messages.
Full details to be confirmed.

Remote Port

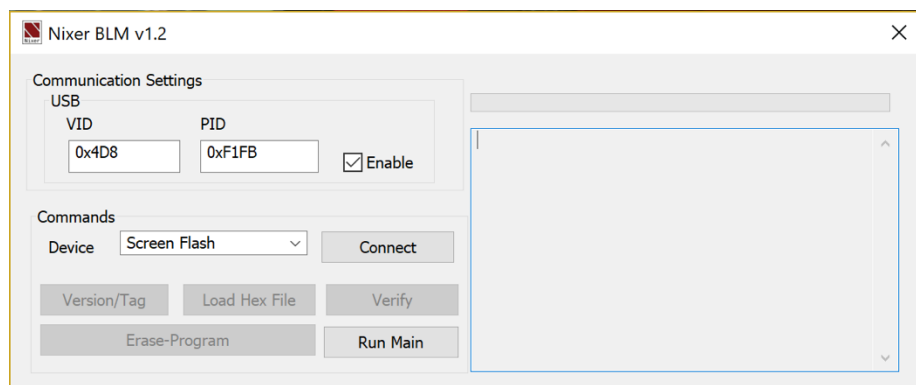
Single RJ45 - NOT an ethernet port.
Wired remote control option on RJ45 connector.
For use with optional hardware remote controllers – details to be confirmed.
RS485 balanced TX and RX pairs.
5V feed to connected device (up to 200mA)
Note: this connector is not compatible with standard ethernet connectors.

Update

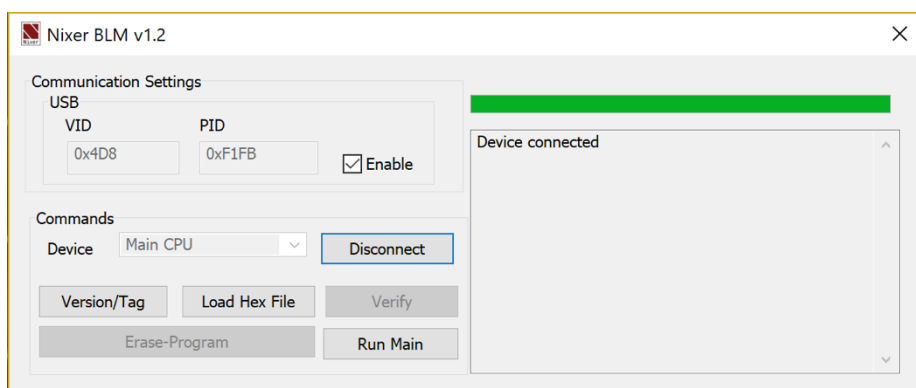
To update your RS32



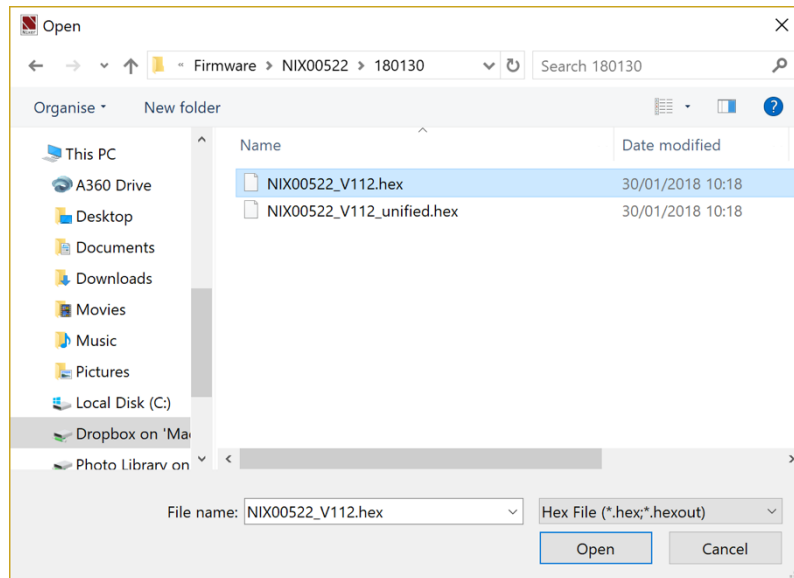
- If you do not have it download and install the Nixer BLM.exe from www.nixerproaudio.com
- Also download the latest firmware from ww.nixer.uk.com to your PC
- Next attach the RS32 to the PC via the USB cable that came with your product
- Navigate to the Update Menu in the System menus and press the button to enter Boot Loader Mode. You will see a countdown of dots before the screen goes blank
- Your RS32 is now ready to update
- Run the Nixer BLM program on your PC



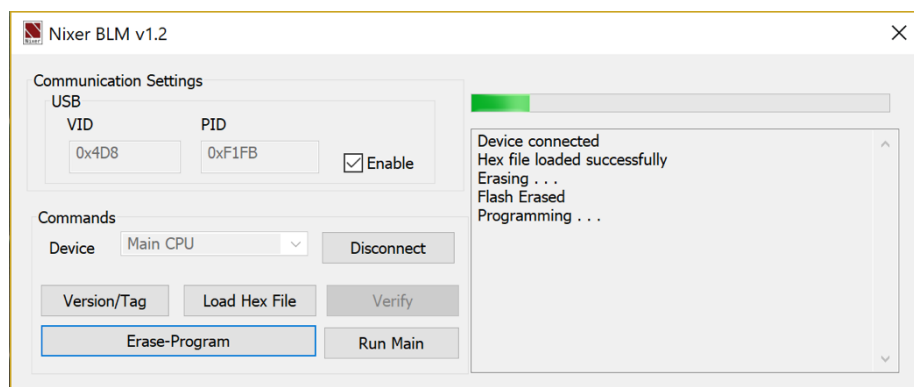
- Once the program is running change “Screen Flash” to “Main CPU” via the drop-down menu and click connect



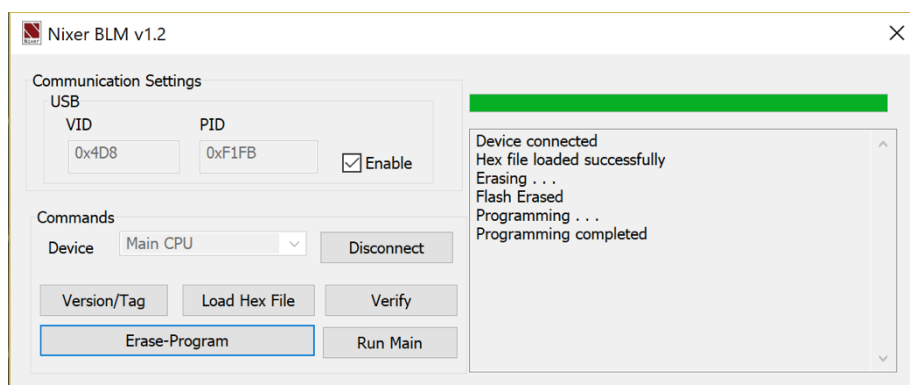
- You will now see that it says device connected in the status window
- Click on Load Hex File. Next navigate to and load in the .hex file that you downloaded from ww.nixerproaudio.com



- Click the Erase-Program Button and your device will be reprogrammed. You will see the progress in the status window and by the status bar which will gradually fill as the device is programme

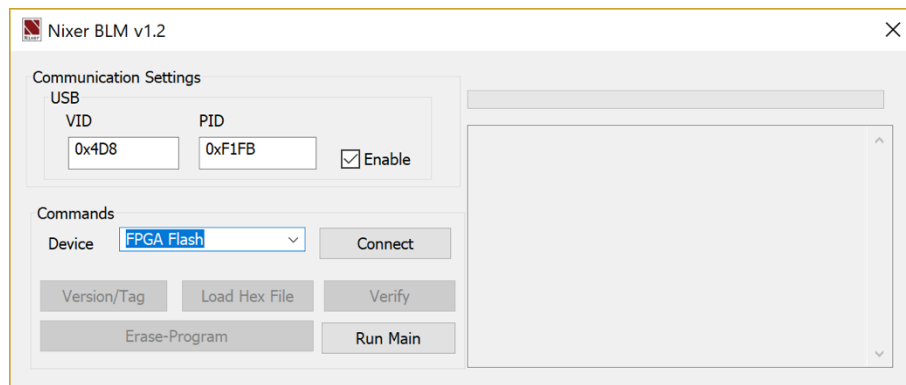


- When the device has been programmed the status window will say "Programming completed. Click Run Main and your unit will reboot with its updated software

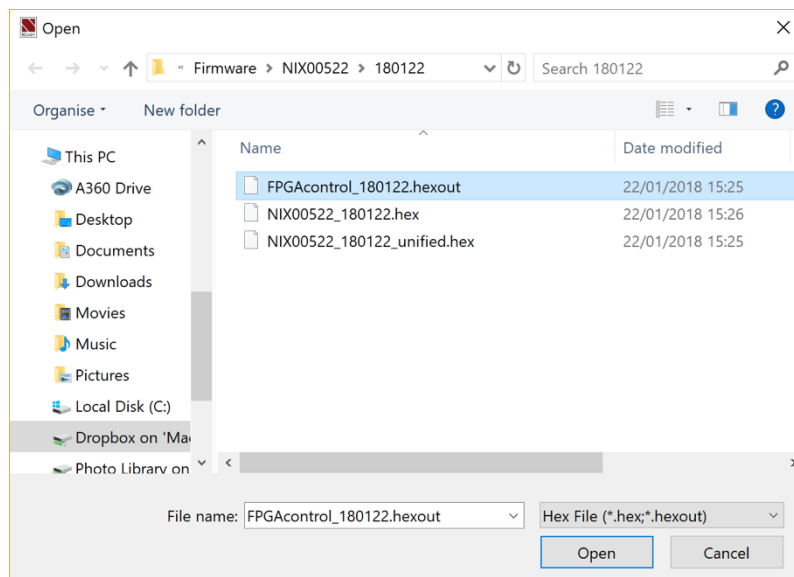


- To update the FPGA firmware, start the Nixer BLM program

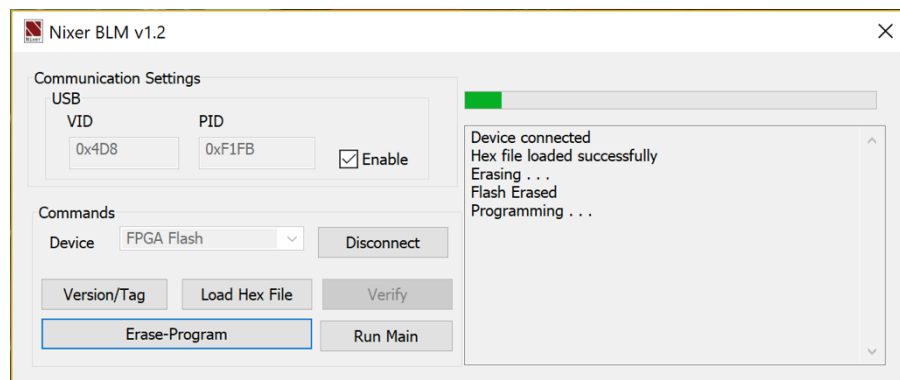
- Select FPGA Flash from the pull-down menu and click connect



- Once connected click Load Hex File and navigate to and open the .hexout file you have downloaded



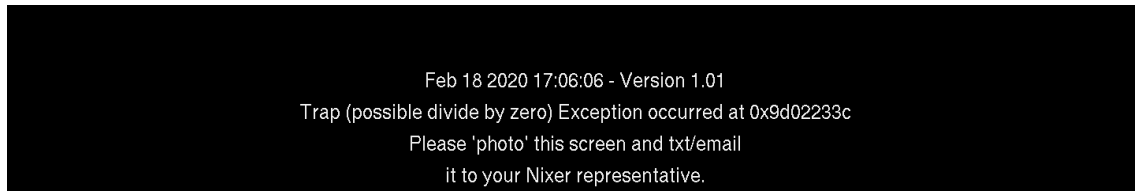
- Click Erase-Program



- Once the status window says Programming complete click Run Main and your RS32 will reboot

- When the Splash Window starts you will see confirmation of the Main CPU firmware followed by the FPGA version

Exceptions and Errors



If you experience an Exception which causes the RS32 to freeze please take a picture of the screen and email it to support@nixerproaudio.com. Please also supply, if possible, a description of how you were using the RS32 at the time the error occurred, what screen you were in, buttons pressed etc

Restarting your device should resume normal functionality again

Support

Additional information about Nixer products, updates, manuals etc can be found at

www.nixerproaudio.com

All support and technical questions should be addressed to your local distributor or can be sent directly to

support@nixerproaudio.com

Nixer RS32 AoIP Specifications

32x 2 by 1 switches at 48kHz (16x 2 by 1 switches at 96kHz)

Sample rates supported

44.1kHz

48kHz

88.2kHz

96kHz

Bit Depth supported

16bit

24bit

32bit

Dante or Ravenna option - at time of purchase

AES67 compatible

SMPTE 2110 compatible

Fully compatible with New Dante Domain Manager – Dante option only

AoIP inputs

Dual 1Gbps RJ45

1Gbps or 100Mbps operation (Ravenna supports 1Gb only)

User configurable for Switched or Redundant operation

Network configuration information available via menu

Control input

Single RJ45 100Mbps

OSC remote control of the product

Remote Control

Single RJ45 - NOT ethernet

Wired remote-control option on RJ45 connector

For use with optional hardware remote controllers

RS485 balanced TX and RX pairs

5V feed to connected device (up to 200mA)

Note: this connector is not compatible with standard ethernet connectors

Power input

PoE (13W) on Primary RJ45 connector

2.5mm DC inputs socket for use with external 24V 2amp adaptor

Both power inputs can be active at the same time for redundancy

Other Ports

USB port is also used for product firmware updates

LCD

6.6" (168mm) diagonal 24-bit colour LCD with 1440xRGBx240 resolution

LED backlight (adjustable brightness via software)

multi touch capacitive touch overlay with gesture support

Product Sizes

Dimensions 494mm wide by 120mm deep by 44mm height

Weight 1.0kg

19inch rack mounting ears can be removed for desktop use

Dimensioned Drawing

