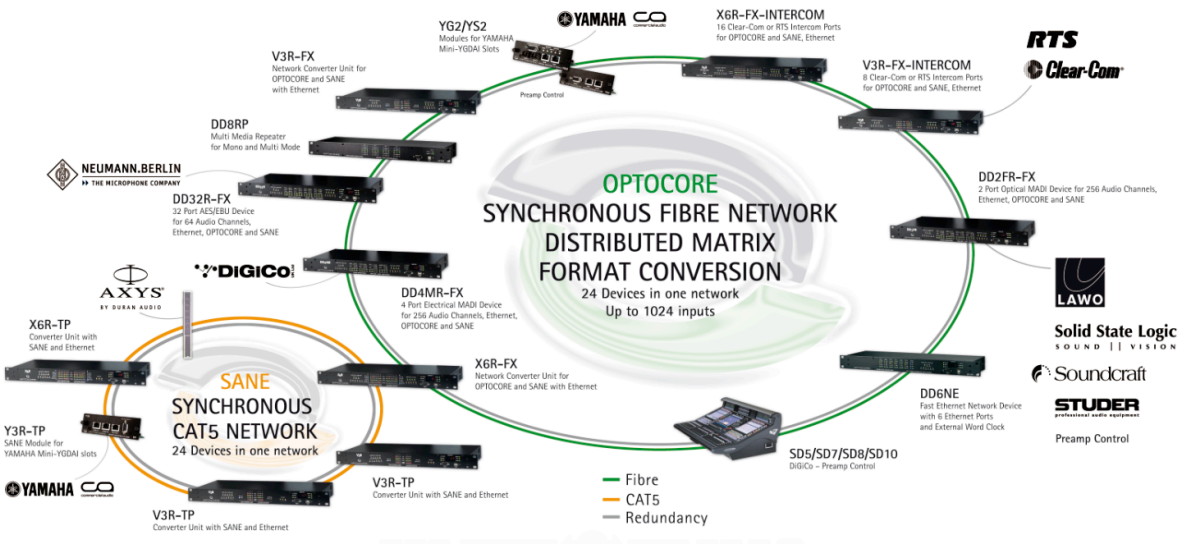
OPTOCORE



Optocore Quick Start Guide

Rev. 2.21.024

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Table of Contents

Optocore Control Software installation 4
Workstation, Client and Server installation setups 4
Software installation 4
Configuration 5
Optocore network configuration 5
Device ID and network input setup 6
Software Local Settings 7
Device writing 10
Routing audio 11
Send routing to the Optocore network 13
Going online 13
Firmware upgrade 14
Startup dialog 14
Entering Upgrade Mode 14
Upgrade procedure 14
Cold boot 15
Contact information 16

This document is intended to be an introduction to the Optocore Control Software and basic system configuration.

To expand an Optocore network using SANE devices, please refer to the SANE with Optocore Quick Start Guide. For further information, please refer to the Optocore Software Manual.

> **Important:**
> Do not connect Optocore devices before configuring device IDs and basic Local Settings (such as Sample Rate) using the Optocore Control Software.
>
> Do not connect Optocore network to other devices until its configuration, operation, levels and signal flow have been verified.

Optocore Control Software installation

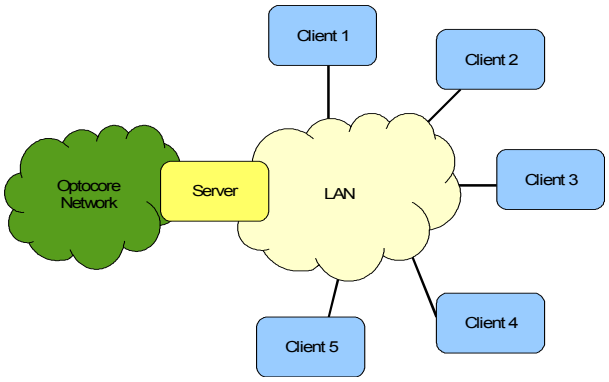
This chapter describes the installation of the Optocore Control Software.

Workstation, Client and Server installation setups

The Optocore Control Software has three different installation setup options that must be selected during the installation of the software: Workstation, Client/Server and Client only.

The Workstation installation setup is recommended if only one computer controls the Optocore network.

When the Optocore network needs to be controlled from multiple computers (clients) the Client/Server installation setup of the software should be used.



The server allows remote clients to communicate to the Optocore network. All remote clients can manage the Optocore network through the server as long as they are connected to the same LAN network.

User accounts and access control can be setup using the Client/Server software.

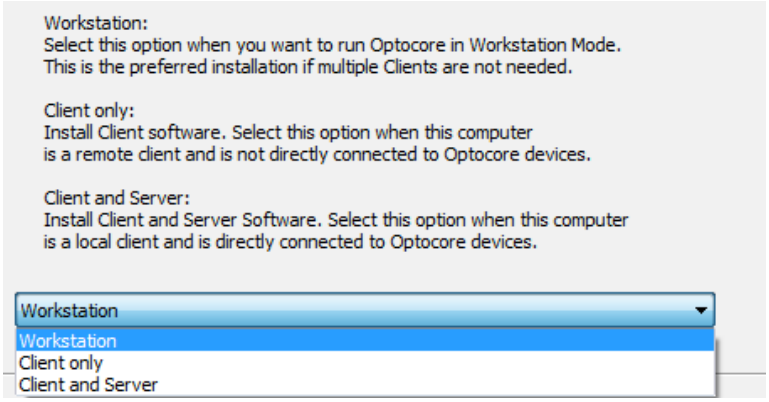
To install the server select the “Client and Server” installation setup. On Client computers, not physically connected to the Optocore network, select the “Client only” installation setup.

The computer acting as a Workstation or a Server must be physically connected to the Optocore Network using USB, Ethernet or RS232 connection.

Software installation

Start the software installation program and follow the installation wizard.

Choose the installation setup type that meets your requirements.



Please note:
Depending on the computer's operating system, the installer might need to be "Run as administrator"

The software is installed to the "C:\Program Files\Optocore" folder by default. If you would like to keep the previous software version, change a name of the folder containing the earlier software version before running the installer.

Once the software is installed, the connection method (USB, Ethernet, RS232), between the Workstation (or a Server) to the Optocore network, must be configured in the "Administration" -> "Server Options" dialog.

This manual refers to the Workstation setup of the Optocore Control Software.

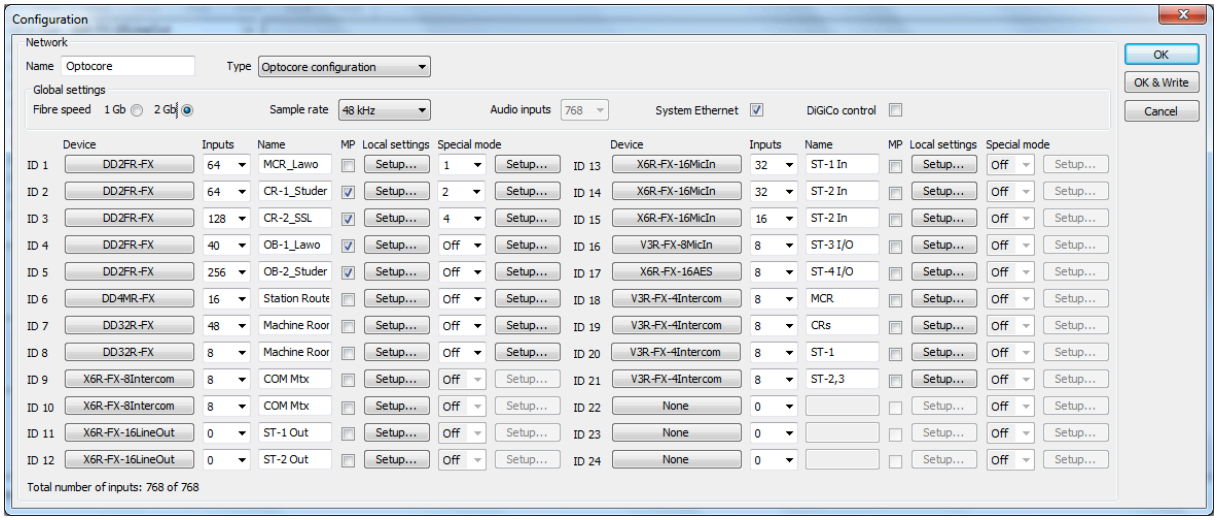
Configuration

This chapter introduces the configuration concepts for an Optocore network. The configuration parameters should be set before the system is connected and operated.

Optocore network configuration

Each Optocore device in the network must have a unique ID number. The first step in configuring an Optocore network is to assign an ID to each device.

Enter the "Set" drop down menu and select "Configuration":



- Select the configuration type as: "Optocore Configuration"
- Set the Optocore Fibre speed to "1Gb "or "2Gb", depending on the devices used in the Optocore network.

Please note:
All Optocore R-Series devices are capable of operating on a 2Gb network.

For systems that operate with older (non R-Series) devices in the network, 1Gb fibre speed must be selected

When using non-bandwidth optimized multimode fibre cables, operating the network at 2Gb will result in a loss of half of the maximum cable length between devices.

- Select a "Sample Rate" for the configuration
- Select "System Ethernet" to enable Ethernet transport on the Optocore network

Device ID and network input setup

Each Optocore device in the network must be assigned a unique ID number.

> **Please note:**
> The order of device ID does not need relate to physical connections of the network.
>
> The lower the ID, the higher is the priority of the device to act as the network's master.
>
> Assign lower IDs to installed devices than portable devices.

- To add a new ID to your network, select a relevant device type from the Select Device dialog.
- Select the maximum number of audio inputs needed from the device to the Optocore network.

> **Please note:**
> The utilization of the total channel capacity of an Optocore network is determined by the number of inputs from the device to the network.
>
> The number of inputs configured for a particular device may differ from its number of available physical inputs, in order to optimize the use of available channel capacity.

Example:
A DD32R-FX can be set to have up to 64 physical input channels. Only 8 channels may be needed. In this case the DD32R-FX input number can be set to 8 in "Configuration" window and the remaining 56 input channels can be used for other IDs on the network.

The Configuration window allows naming the devices (ID) and to set additional "Master Priority (MP)".

At the bottom of Configuration window the total number of configured and available input channels can be seen.

Software Local Settings

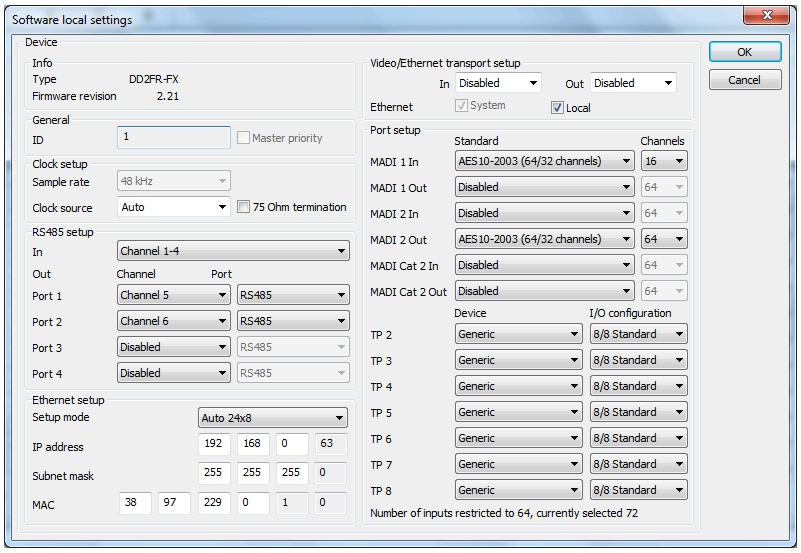
The next step in configuring an Optocore network is to configure the Software Local Settings of each device, the Local Settings include a selection of word clock sources, RS485, Ethernet and Video transport as well as port configuration.

- In the “Configuration” window, click the “Setup” button in Local Settings column for the first device in the Optocore network and configure as needed
- Configure Local Settings for each device in the system.

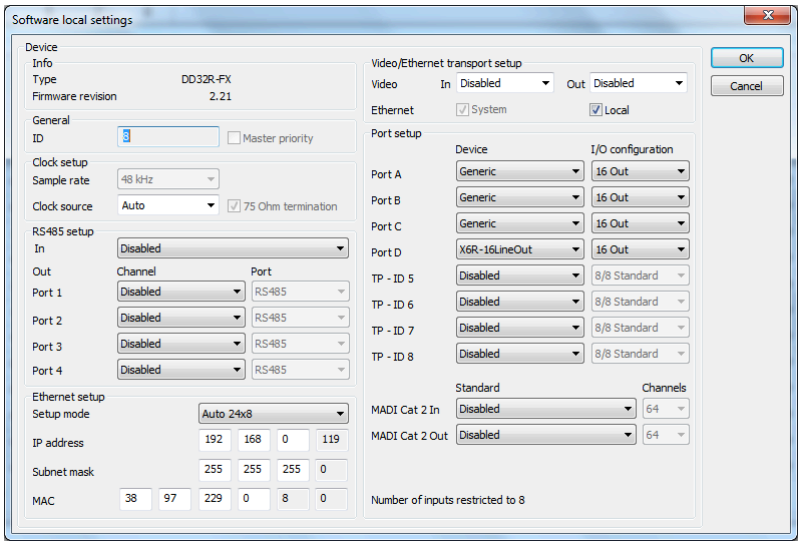
> **Please note:**
> The Software Local Settings dialog differs depending on the device type.

> **Please note:**
> It is recommended to prepare a full Optocore configuration, including all Local Settings, before proceeding to writing the initial configuration to the devices.

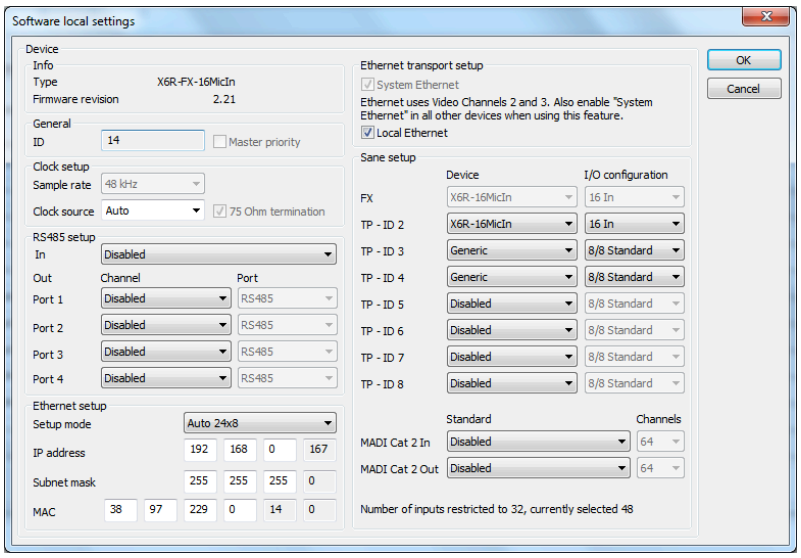
Software Local Settings DD2FR-FX



Software Local Settings DD32R-FX



Software Local Settings
X6R-FX



Word Clock setup

Select a Word Clock source for the device

Int - Internal Word Clock
BNC - External Word Clock, requires the Master Priority (MP) to be set in the “Configuration” window
Auto – The device automatically switches to the external Word Clock when present

RS485 setup

Configures routing of serial signals connected to the four-channel Auxiliary Port.

• Select a four-channel serial input block to transmit serial signals from the device to the Optocore network. The signals will be available to every device on the Optocore network.

• Select a serial channel for each of the four output ports and configure the output as RS485 (for bi-directional serial signal) or RS422 (for uni-directional serial signals)

> **Please note:**
> For transport of MIDI and GPIO using the Auxiliary Port, please contact Optocore support – **support@optocore.com**
>
> Fully bi-directional RS422 requires two serial channels.
>
> Each serial input block can only be transmitted by one device on the network.

Video/Ethernet setup

Configures routing of composite video signals (DD32R-FX, DD4MR-FX, DD2FR-FX) and enables Ethernet.

• Select a channel to transmit the composite video input from the device to the network. This makes the video signal available on the Optocore network.

• Select a video channel to output a composite video signal from the network.

• Select “System Ethernet” to enable Ethernet on the Optocore network
System Ethernet can also be set for the entire system in the “Configuration” window.

• Select “Local Ethernet” to enable Ethernet on the Optocore device.

Port setup

AES/EBU port setup (DD32R-FX):
The AES/EBU ports of the device can be set to be generic AES/EBU inputs and/or outputs as needed for the system.
Additionally, the ports can be configured with profiles for connected Optocore converters such as the X6 and V3. Selecting these profiles enables software control of the converters, provided they are connected using an Optocore BI-B cable or equivalent.

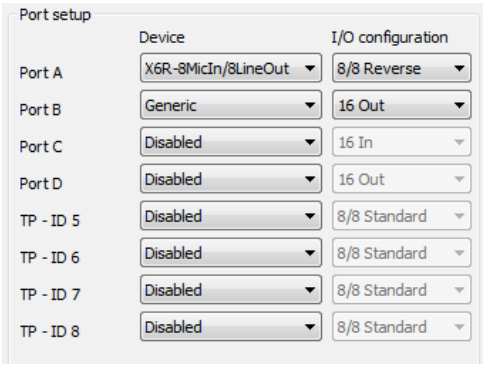
MADI port setup (M-Series, DD2FR-FX and DD4MR-FX):
The MADI ports can be set to the 56 or 64 channel AES10 MADI standards as well as how many of the channels are accessible in the Optocore Control Software.

Sane/TP port setup (all FX devices):
Please refer to the “SANE with Optocore Quick Start Guide”.

Example:
Optocore DD32R-FX is to be used with an Optocore X6R-8MI/8LO converter connected to Port A and an AES/EBU device from a third party manufacturer with 16 analog outputs connected to Port B.

DD32R-FX’s Local Settings for Port A:
“X6R-8MI/8LO” - “8/8 Reversed” I/O Configuration.

DD32R-FX’s Local Settings for Port B:
“Generic” - “16 Out” I/O Configuration.



Device writing

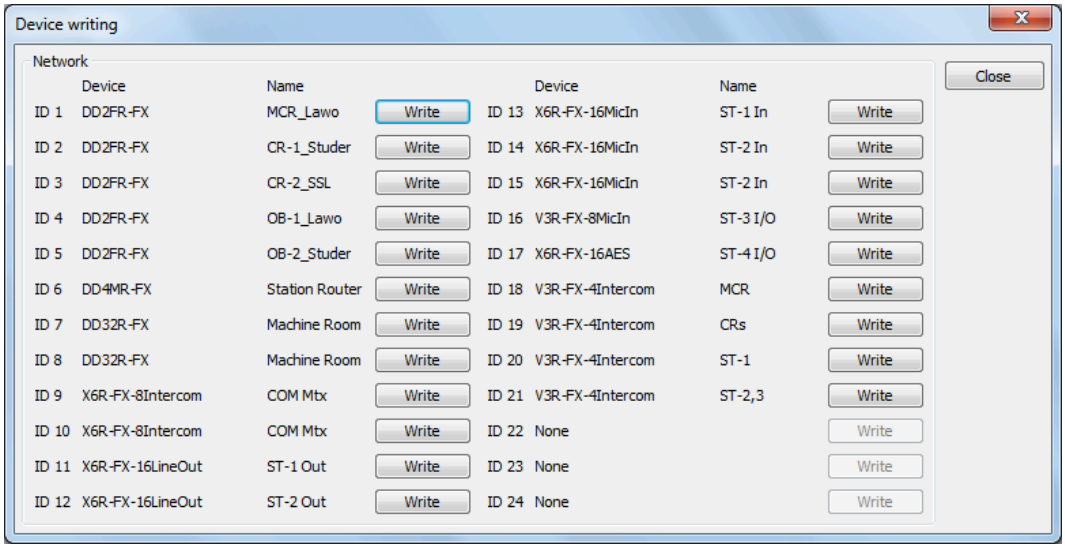
At this point all devices in the system should be configured in the Optocore Control Software.

The initial configuration is now ready to be written to each individual device.

• Connect to the device that is to be the first ID using the USB, Ethernet or RS232 port of the Optocore device

> **Please note:**
> The software needs to be configured to connect to the devices using USB, Ethernet or RS232.
>
> In the “Administration” drop down menu, select “Server Options” to set the connection method.
>
> Refer to the Optocore Software Manual for setup of the Ethernet connection

• In the “Configuration” window, click on “OK & Write”.
The “Device writing” dialog opens.



• Click on the “Write” button for the ID to be written. Found devices dialog appears. Choose the device you want to write to and let the software finish writing the device (this takes a few seconds).

• Verify that the device has the correct ID on the front panel and proceed to write the next device until all devices have been written.

> **Important:**
> It is very important to ensure that the correct ID is written to the correct device.
> The software will not warn the user if the same ID is being written to multiple devices.
>
> Please verify the IDs on the physical devices before connecting the system.

• The system is now ready to be connected. The devices can be connected in any order.

Routing audio

After completing the configuration, audio can be routed between Optocore devices on the network.

In the Optocore Control Software, individual devices can be selected from the “Network Tree” on the left. Once a device is selected, audio can be routed to and from that device.

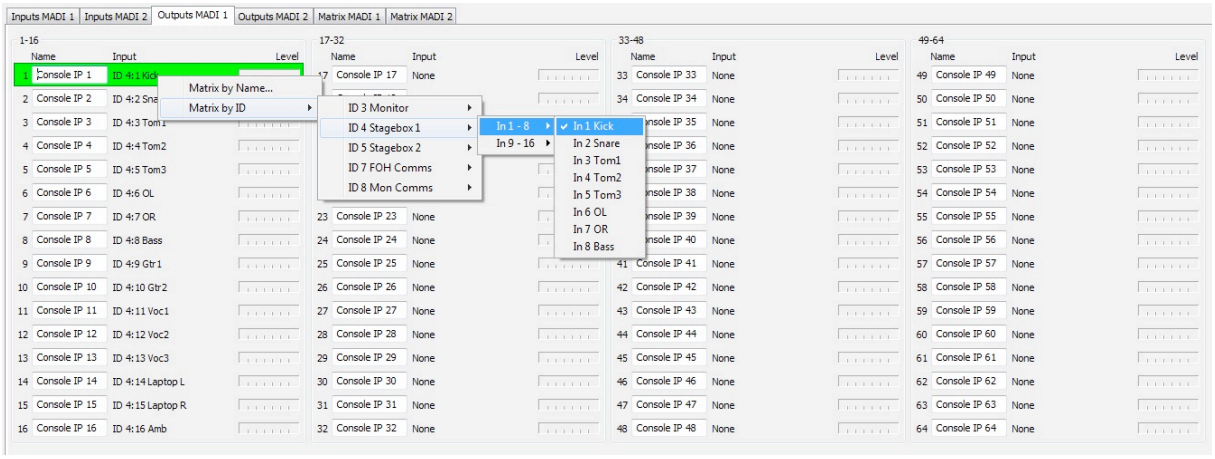
There are four methods available to route audio in the Optocore Control Software:
- From the device’s input tab (by output name or by ID)
- From the device’s output tab (by input name or by ID)
- Matrix crosspoints
- Set multiple channels

> **Please note:**
> It is recommended to name all devices, inputs and outputs before routing audio.

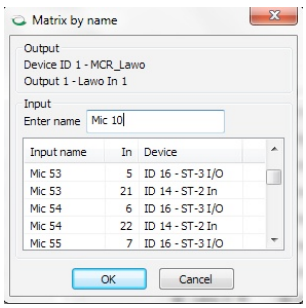
> **Please note:**
> Any input can be routed to multiple outputs.
> Multiple inputs cannot be routed to one output.

Routing audio using the device’s input/output tab

- Select a device from the device tree.
- Select an input (or output) tab in main window and right click on the channel to be routed.
  - Select Matrix by ID
  - Select the device to route to (or from)
  - Select the output (or input).

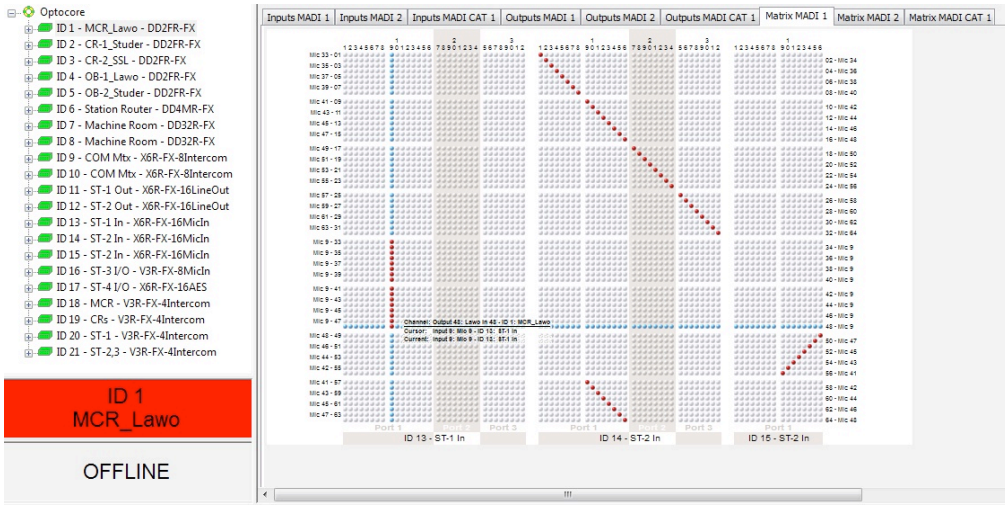


- When inputs and outputs are named, routing can be established using the channel names
  - Right click the channel to be routed on the input (or output) tab
  - Select “Matrix by Name”
  - Select the channel from the list, or enter the name of the output (or input) to route



Routing audio using the matrix

- Select the device you want to output signal from the device tree.
- Select the Matrix tab
- Route by clicking on a single crosspoint or by clicking and dragging over consecutive crosspoints



Please note:
Inputs are in vertical columns

Outputs of the selected device (from the device tree) are in horizontal rows

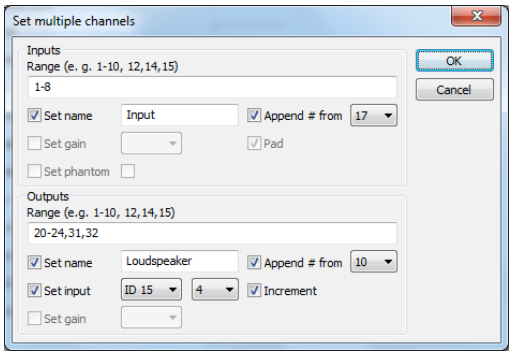
Please note:
The visibility of the matrix view can be adjusted for each device indivibually.

Go to the "Set" drop down menu and select “Matrix Visibility”
Alternatively; set using the Matrix Visibility toolbar buttons (1-24) for the selected device

Routing audio using “Set Multiple Channels”

Routing and channel names can be set for multiple channels using the Set Multiple Channels.

- Select a device from the device tree•
- Specify a range of channels (for example 1-8)
- Specify channel names, routing, gain, pad and phantom power if needed.
- Click “OK”



Send routing to the Optocore network

Once the audio routing has been set, it can be sent to the Optocore network.

- Select from the drop down menu: “Action” -> “Send”

> **Please note:**
> The “Send” command, sends all audio routing, gain and phantom power settings to the network.
>
> The “Send All” command, sends all network configuration parameters (except for IDs and Ethernet configuration) in addition to the audio routing, gain and phantom power

Going online

- Select from the drop down menu: “Set” -> “Online Mode”.
  The software will read out the current settings of the system and load into the software
  The Online/Offline indicator in the software will turn green.
- Verify the operation of the system and that all I/O meters indicate the expected levels
- The system is now ready to be used.
  Equipment connected to the network can now be turned on and operated.
  Routing, gain, pad and phantom power control can be operated in real time and any changes are automatically stored in the network devices.

Firmware upgrade

Optocore firmware can be upgraded using a computer running Windows XP/Vista/7/8 with USB, Ethernet, RS232 serial port or an USB to RS232 adapter (COM ports 1 to 4 are supported in the upgrade utility).

R-Series and M-Series devices can be upgraded with USB, Ethernet or RS232. Other devices need to be upgraded using RS232.

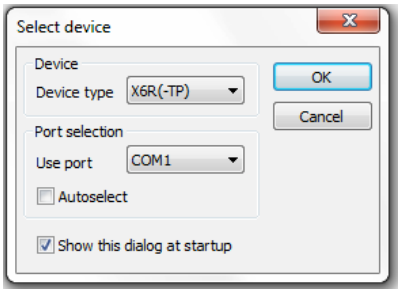
Please note:
Computer serial interfaces are normally not capable of being “Hot Plugged”. Switch off the computer to avoid damage before establishing a serial connection between an Optocore device and the computer.

Please note:
The firmware upgrade procedure must be performed locally for each device.

Important:
Keep all auxiliary equipment powered down and muted until the firmware upgrade of the system is complete and the systems configuration has been loaded and verified.

Startup dialog

- Start the Optocore Update utility by double clicking the OptcrUpgrade.exe
  The Select Device dialog opens
- Select the device type to be upgraded
- Select the USB/Ethernet/Serial port connected to the device



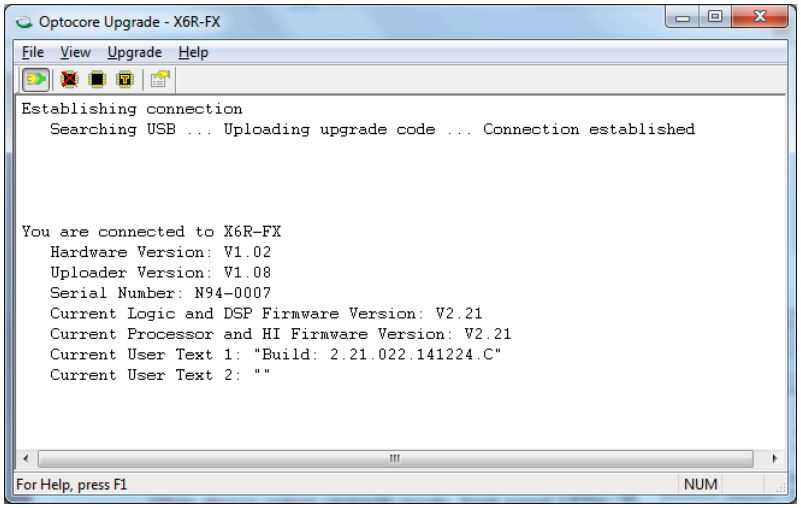
Please note:
Only R series devices can be selected when the USB or Ethernet ports are selected.

Entering Upgrade Mode

The software utility and Optocore device enter an Upgrade Mode. Current firmware and hardware version are read from the device.

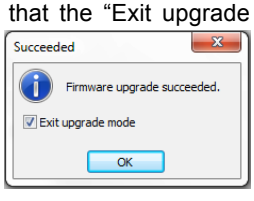
User Text 1 shows detailed information about firmware – the exact firmware revision and date of release.

While device enters upgrade mode, front panel LEDs black out. (for X6R and V3R devices, cards configuration LEDs lit only)



Upgrade procedure

- Select from the drop down menu: “Upgrade” -> “Erase all settings” or click the proper button an the toolbar or use “F3” key.
- Select from the drop down menu: “Upgrade” -> “Upload Firmware”, or. click the proper button an the toolbar or use “F4” key
- Once the software utility prompts that the firmware upgrade is successful make sure that the “Exit upgrade mode” is selected and press “OK”.
- After the device has rebooted, write the Local Settings to the device from the system’s configuration file.



Cold boot

Cold Boot is an option to upgrade the firmware if a problem occurred when entering the Upgrade Mode or during the Firmware Upgrade process. The software utility will display a message that outlines the Cold Boot procedure.

Follow the steps described in the message box to initiate the Cold Boot:

- Power down the device
- From the Cold Boot dialog, select the COM port that you are using to connect to the device
- Press the “OK” button
- After pressing the “OK” button, turn on the device within 10 seconds

The communication will be established and you will be able to upgrade the device as normal

Please note:
Cold Boot can only be run over a RS232 serial connection or RS232 USB adapter.

Contact information

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