

BeoLink Converter NL/ML

Type 1790

Installation Guide

English - version 1.4



Introduction

The BeoLink Converter NL/ML is a converter between the Network Link and the Master Link system and makes it possible to integrate Network Link products and Master Link products.


The BeoLink Converter NL/ML is designed to convert control signals and audio signals between Master Link products and Network Link products. Analog audio signals from products in the Master Link system are converted to digital signals by the BeoLink Converter NL/ML and transferred to the products connected on the Network Link. Digital audio signals from the products on the Network Link are converted to analog signals to products in the Master Link system.

The BeoLink Converter NL/ML has a built-in Web Interface, which is used for Set up. The BeoLink Converter NL/ML is by default set up as a Video Master in option 2. The BeoLink Converter NL/ML can also be used for active speakers (Power Link enabled).

Navigation in this guide

When the guide is opened, it automatically opens in Full Screen Mode (can be left as desired - see below). This is primarily done to optimise the usability of screen reading. There are several ways to navigate when using the guide, see the survey of keys, shortcuts and hot keys below:


↓ / → (arrow keys on the keyboard) navigates to the next page
↑ / ← (arrow keys on the keyboard) navigates to the previous page


 (Esc button) exits Full Screen Mode (press **Ctrl + L** to return to Full Screen Mode).

Another feature to optimise the navigation is the navigation icons in the bottom of the screen (see below for explanation).


 Navigates to the next page

 Navigates to the previous page

 Navigates to the previous view

 Navigates you directly to the start page

 Navigates directly to the table of contents (these are active links - click the link to be directed directly to the associated section)

 Prints the document - the print dialogue box opens (**Ctrl + P** also brings up this feature)

Furthermore to ease the navigation, this guide contains links. The links are mouse over active and marked with blue text. Just click on a page reference to be transferred to that page.

How to use this installation guide

This installation guide gives step by step instructions on how to:

- Connect the BeoLink Converter NL/ML
- Setting up and configure the BeoLink Converter NL/ML
- Connect and setting up an NL/ML Delay Box
- setting up and understand different Network Link and Master Link setups
- Use Service Tool and make a SW update

Navigation TIP

The right side of this page and the Table of Contents [page 45](#), acts as an active table of contents. Simply click the subject you want and you are transferred to the section in question.

Warning

Installation and replacement of parts should be made by Bang & Olufsen certified installers only.

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Setting up the BeoLink Converter NL/ML IR mapping - Home Automation
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Connector socket panel

IR IN - RS232

The **IR IN - RS232** socket is used to connect an IR Receiver to the BeoLink Converter NL/ML.

USB

The **USB** sockets are for future use.

NETWORK LINK

The **NETWORK LINK** socket is for the connection to the Network Link router.



The mains socket is for the connection to the mains.

MASTER LINK

The **MASTER LINK** sockets (**RJ45** and **ML**) are used to connect products connected in a Master Link system. This makes it possible to control a compatible audio and video system and to distribute sound throughout the house. The connections in the **RJ45** socket and the **ML** socket are identical.

The **RJ45** socket is used if the Master Link cable is equipped with a RJ45 plug.

The **ML** socket is used if the Master Link cable is equipped with a Master Link plug.

POWER LINK

The **POWER LINK** socket is used to connect speakers to the BeoLink Converter NL/ML.

AUX IN L/R

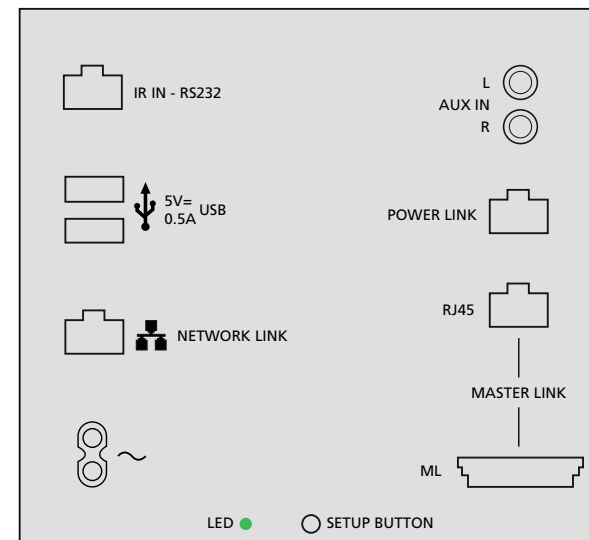
The **AUX IN LR** socket is used to add a signal from another source. (The AUX IN is also named line in)

SETUP BUTTON

The **SETUP BUTTON** can be used during normal operation by pressing and holding the button.

LED

The **LED** indicator gives feedback about the status of the system and about functions chosen with the **SETUP BUTTON**.



LED Indications

The LED on the socket panel is used to give feedback about the system status of the BeoLink Converter NL/ML.

The LED gives information about:

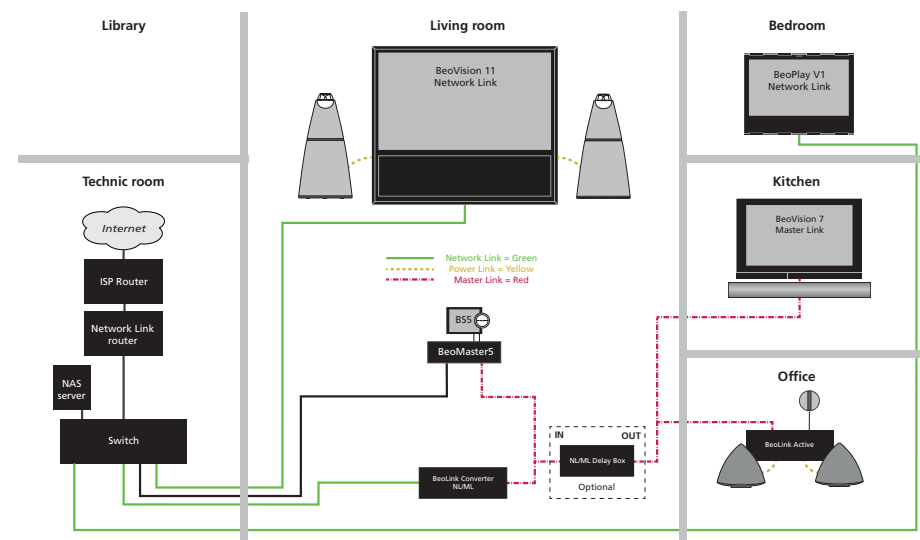
- Booting/System Boot, Master Link start up, network start up and product configuration.
- Critical error - for instance no communication with the H8 microcomputer or an application error.
- Normal operation/streaming.
- Normal operation/no streaming.
- Flash updating peripherals.

	Solid	Flashing
Green	Normal operation/streaming	Booting/System boot, MasterLink start up, Network start up, Product configuration
Orange	Not used	Critical error
Red	Flash update of peripheals (don't turn off power)	Not used
Off	Normal operation/no streaming	

Connecting the BeoLink Converter NL/ML

Connecting cables

- Disconnect all existing products in the system from the mains before connecting any cables.
Connect the following cables:
- Master Link cable from the BeoLink Converter NL/ML and Audio Master to the input socket on the NL/ML Delay Box (Master Link or RJ45 plug).
- Master Link cable from ML products in the link rooms to the output socket on the NL/ML Delay Box.
- Network Link cable from the switch to the BeoLink Converter NL/ML.
- Network Link cable(s) from the product(s) supporting Network Link to the switch.
- Ethernet cable from the ISP router to the Network Link router.
- Ethernet cable from the Network Link router to the switch.
- Connect all products - including the BeoLink Converter NL/ML - to the mains.



Network Link supported products

The BeoLink Converter NL/ML must be activated in the **PRODUCT INTEGRATION** menu in the network link supported products. In this setup the BeoVision 11 and the BeoPlay V1. Access the following menu in the TV: **SETUP > PRODUCT INTEGRATION**.

BeoVision 11 (Living room)

- **LINK TO OTHER PRODUCTS:** Select BeoLink Converter NL/ML (Select the product to be distributed from. In this setup the sources are distributed from the Audio Master (BeoMaster5) via the BeoLink Converter NL/ML).
 - **IS BeoLink Converter NL/ML IN THE SAME ROOM AS THIS TELEVISION?:** Select YES. (Select whether or not the Audio Master (BeoMaster5) and not the BeoLink Converter NL/ML is in the same room as the TV).
 - **DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?:** Select YES. (Select whether or not the TV speakers should be shared and used as the only speakers for the Audio Master (BeoMaster5)).
- ! Selecting YES to both questions above will result in a two-way connection between the BeoLink Converter NL/ML and the BeoVision 11.*
- **VM OPTION:** Select option 2. (This setting is only relevant for Beo4 remote).

BeoPlay V1 (Bedroom)

- **LINK TO OTHER PRODUCTS:** Select BeoLink Converter NL/ML (Select the product to be distributed from. In this setup the sources are distributed from the Audio Master (BeoMaster5) via the BeoLink Converter NL/ML).
- **IS BeoLink Converter NL/ML IN THE SAME ROOM AS THIS TELEVISION?:** Select NO. (Select whether or not the Audio Master (BeoMaster5) and not the BeoLink Converter NL/ML is in the same room as the TV).
- **VM OPTION:** Select option 2. (This setting is only relevant for Beo4 remote).

*! Network Link products connected to the BeoLink Converter NL/ML must be switched on to make it possible for the BeoLink Converter NL/ML to detect them automatically. Master Link sources that are not present in the system has to be removed manually in the **Configuration** menu under **Experience mapped to NL**.*

! The NL/ML Delay Box is optional. Mount a NL/ML Delay Box for echo free audio source distribution.

Setting up the Network

Network Link

An extra router (Network Link router) is recommended for the Network Link as it needs it's own subnet.

The WAN port on the Network Link router must be connected to a LAN port on the ISP router with a CAT7 cable. This is done to avoid that data traffic meant for the 1st subnet will interfere with data traffic on the 2nd subnet.

The Bang & Olufsen products can be connected to any of the LAN ports on the Network Link router. Each of the four ports on the Network Link router can be extended with a switch recommended by Bang & Olufsen.

Access the Network Link router

In order for the Network Link router to work when connected to the existing network, it must be configured with a different address range than the ISP router on the network.

- Connect a PC to the Network Link router and enter the default IP-address 192.168.1.1 in the address field in the Web browser on the PC.
- Enter User Name: **admin** and Password: **admin**. (If a Network Link router is already installed the User name and Password might be changed).

Set up a Bang & Olufsen sub-network

- Access the Network Link router
- Go to **Basic Setup** screen, **Network Setup** and **Router Address**.
- Enter the IP address to 192.168.100.1 and save the settings

The Bang & Olufsen sub-network has now been setup. All devices connected to this sub-network must have the IP address 192.168.100.XXX. The last three digits in the IP address are unique.

Setting up the BeoLink Converter NL/ML

DHCP setting

The BeoLink Converter NL/ML is delivered from the factory with DHCP enabled to be able to obtain the IP-address automatically.

Access the web interface

For setting up the BeoLink Converter NL/ML the Web Interface have to be accessed. The Web Interface can be accessed in following four ways:

Direct connection. (Connect a computer directly to the BeoLink Converter NL/ML via the Internet Browser)

- Disconnect the mains, reconnect the mains and wait until the LED indicator behind the socket panel cover stops flashing green.
- Enter the IP-address: 169.254.11.22 in the Internet Browser.
- Enter the default user name **admin** and the default password **admin**.

! When using the direct connection it is not possible to update software. If the direct connection is used, a software update can be made with the ServiceTool.

Connection via a Network Link router.

- Connect a computer to the Network Link router.
- Access the router and check the DHCP Reservation to find the current IP-address for the BeoLink Converter NL/ML (It will be named BLC-<serial number>).
- Leave the DHCP Reservation menu and enter the BeoLink Converter NL/ML IP-address in the address line of the Internet Browser. If the computer has Bonjour or similar the BeoLink Converter NL/ML can be found in same way as on an iPhone/iPad (see below).

Connection via an Internet Browser.

(An iPad/iPhone can be used to access the Web Interface in the BeoLink Converter NL/ML).

- Open the Internet Browser on the iPad/iPhone (**Safari**).
- Enter **BLC-** followed by the BeoLink Converter NL/ML serial number: **[BLC-XXXXXXXX.local]**.

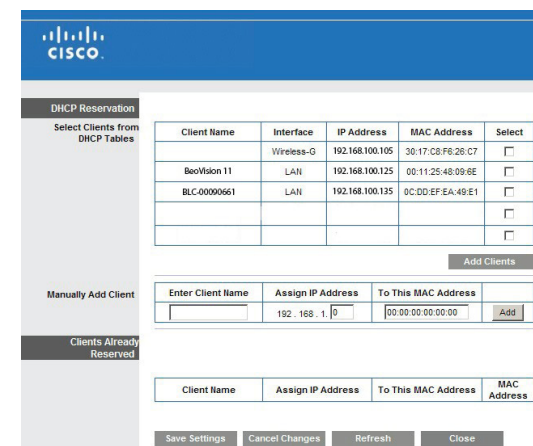
Connection via the BeoSetup App.

(An iPhone/iPad can be used to configure the BeoLink Converter NL/ML via the BeoSetup App).

- Download the BeoSetup App. (BeoLink Converter NL/ML is supported from version 3.5.5).
- Open the BeoSetup App. and choose BeoLink Converter NL/ML

The BeoLink Converter NL/ML **Access Menu** gives access to the **Set-up Menu**. The current software version and the Master Link master role can be seen in the menu. When the Setup button is pressed the default **User name** and **Password** must be entered.

- Default **User name**: admin Default **Password**: admin



Tools > Software update

To update the software on-line in the BeoLink Converter NL/ML, it must be connected to the Internet via a router.

Software status (Check available version/Update)

Shows the actual software version. It is possible to check the available software version and if required to download the latest version. The **Check available version** button is used to check the latest software version. The version of the current software in the BeoLink Converter NL/ML and the available version are shown at the same time. The **Update** button starts the software updating.

Automatic update (Enable/disable)

The automatic software update can be disabled or enabled. If the automatic software update is enabled the owner of the BeoLink Converter NL/ML must agree that Bang & Olufsen are allowed to update the BeoLink Converter NL/ML and other products connected in the link system, when a new software version is available.

Usage patterns (Enable/disable)

When this function is enabled Bang & Olufsen are able to upload statics, e.g. information about the Service Counters from the BeoLink Converter NL/ML. Enabling the **Usage patterns** must be agreed by the owner of the BeoLink Converter NL/ML.

! *Never switch the BeoLink Converter NL/ML off during the installation of new software. Check the LED indicator on the socket panel. If it lights solid red a software update is in progress. If the BeoLink Converter NL/ML is not working properly after a software update it must be restarted using the default installed software.*

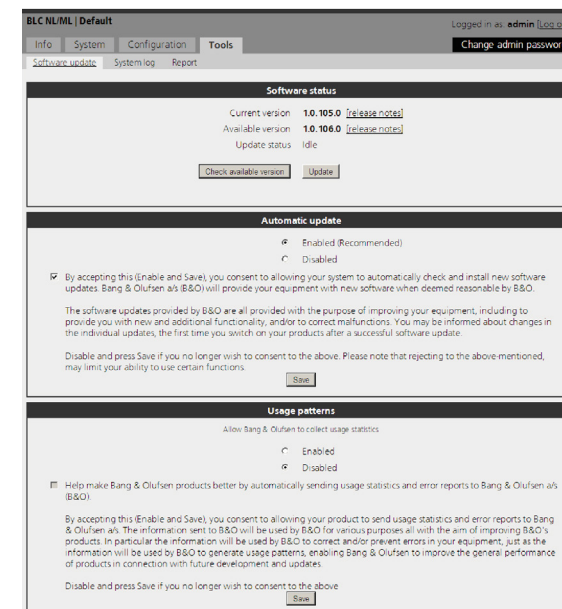
! *Remember to save the settings.*

Configuration > Settings

Set up sources in other Network Link products before setting up the **Configuration Menu** in BeoLink Converter NL/ML. As the BeoLink Converter NL/ML makes initial source settings based on the products selected in **Connect to (primary)** and **Connect to (secondary)** It can save a lot of manual work.

MasterLink (Enable/disable)

The Master Link can be disabled or enabled. Disable Master Link when the BeoLink Converter is used for driving Power Link speakers only as in Example 1 (Network Link without Master Link setup), see [page 20](#). The **ML Role** is default set as a V Master, but can be changed. The BeoLink Converter NL/ML has the configured role seen from the Master Link side. For further information about ML Roles, see [page 39](#).



IR

The **IR option** is only relevant if Power Link speakers and IR receiver are connected to the BeoLink Converter NL/ML. IR option can be set to 1, 2 and 4.

NetworkLink

NL alias is an alias which is required for the product connected via the Network Link e.g. a BeoVision 11. The alias identifies the BeoLink Converter NL/ML and makes it possible to communicate with products on the Network Link and the Master Link.

BNR alias is an alias which is used and shown in Apps. This could be relevant when Apps control a BeoLink Converter NL/ML mounted with Power Link speakers for instance as in **Example 5 (Network Link and Master Link setup)**, see [page 25](#).

Connect to (primary): The table **Sources visible on ML** will first be filled with sources from the product selected in **Connect to (primary)**.

Connect to (secondary): Unused source names in the table **Sources visible on ML** will be added from the product selected in **Connect to (secondary)**.

- ! All products on the Network Link are detected automatically. If more than one Network Link supported product is connected to the Network Link they will be visible in the drop-down boxes. In this case one of the products must be chosen to communicate with the BeoLink Converter NL/ML.

PowerLink

Default volume can be changed in a range between 0-60.

Line-in sense (Enable/disable) (By default disable)

The line-in sense can be disabled or enabled. If it is enabled then detection of SENSE ON, line-in source is selected to Power Link after **Speaker on delay** timeout. Detection of SENSE OFF speakers are turned off after **Speaker off delay**. (in case line-in source is still playing to Power Link).

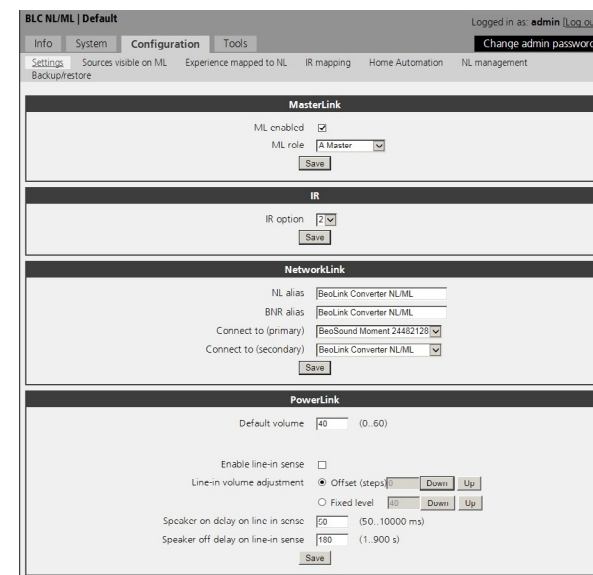
Line-in volume adjustment on Power Link can be set to **Offset (steps)** or **Fixed level**. With **Offset (steps)** it is possible to add offset to the **Default volume** and with **Fixed level** it is possible to set the PowerLink output volume to a certain level.

Speaker on delay is by default set to 50 milliseconds but can be changed in a range between 50-10.000 milliseconds.

Speaker off delay is by default set to 180 seconds but can be changed in a range between 1-900 seconds.

- ! IR option settings and Power Link settings are only relevant if Power Link speakers and IR receiver are installed as in Example 1, 2, 4 and 5.
- ! It is suggested to disable line-in sense when BeoLink Converter NL/ML is the only converter (No speakers connected) to avoid interruption of playback to ML on sense detection.

- ! Remember to save the settings.



Configuration > Sources visible on ML (ML Role is V Master)

Here is chosen, which network link source that is desired to be distributed to Master link.

ML source

Shows a list of available sources on Master Link retrieved from Network Link. Source mapping of Beo4 buttons from Master Link rooms to sources on the Network Link.

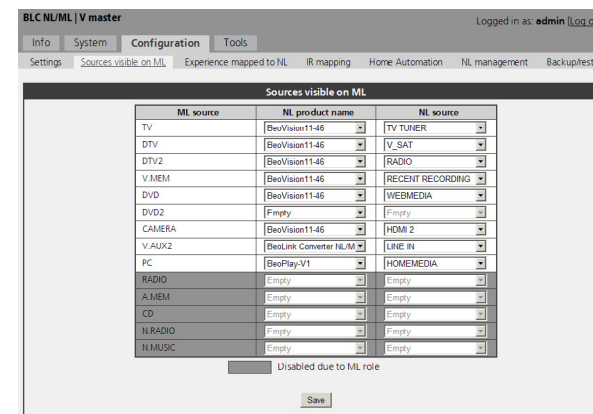
NL product name

Products connected to the Network Link will be visible in NL product name list.

NL source

Network Link sources connected to the Network Link will be visible in NL source list. It is possible to allocate a Network Link source to another Master Link source if required. This can be done in the drop down box.

- ! Products connected to the Network Link are detected automatically.
- ! Remember to save the settings.



Configuration > Experience mapped to NL (ML Role is V Master)

Experience mapped to NL (Sources visible on NL), tells the Network Link products which Master Link sources should be visible in the source list menu on the Network Link products. You can also rename the Master Link sources.

ML source

Shows a list of available sources on Network Link retrieved from Master Link.

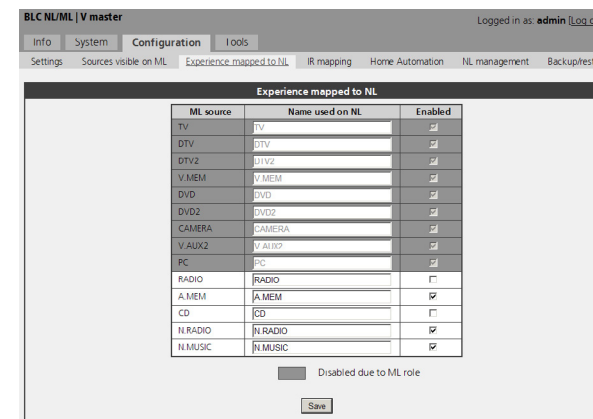
Name used on NL

Shows the source names used on the Network Link. The name will be visible in the source list menu on the Network Link product and it will be shown on the display when a button is pressed, e.g. CD. It is possible to enter any name, e.g. Music, Favourites, etc.

Enabled

Possible to enable/disable a source.

- ! Remember to save the settings.



Configuration > Sources visible on ML (ML Role is A Master)

Here is chosen, which network link source that is desired to be distributed to Master link.

ML source

Shows a list of available sources on Master Link retrieved from Network Link. Source mapping of Beo4 buttons from Master Link rooms to sources on the Network Link.

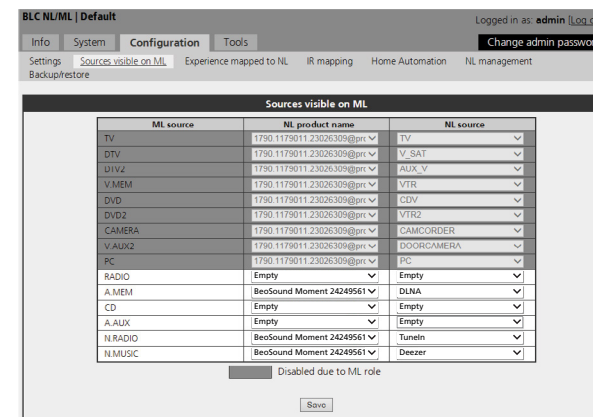
NL product name

Products connected to the Network Link will be visible in NL product name list.

NL source

Network Link sources connected to the Network Link will be visible in NL source list. It is possible to allocate a Network Link source to another Master Link source if required. This can be done in the drop down box.

- ! Products connected to the Network Link are detected automatically.
- ! Remember to save the settings.



Configuration > Experience mapped to NL (ML Role is A Master)

Experience mapped to NL (Sources visible on NL), tells the Network Link products which Master Link sources should be visible in the source list menu on the Network Link products. You can also rename the Master Link sources.

ML source

Shows a list of available sources on Network Link retrieved from Master Link.

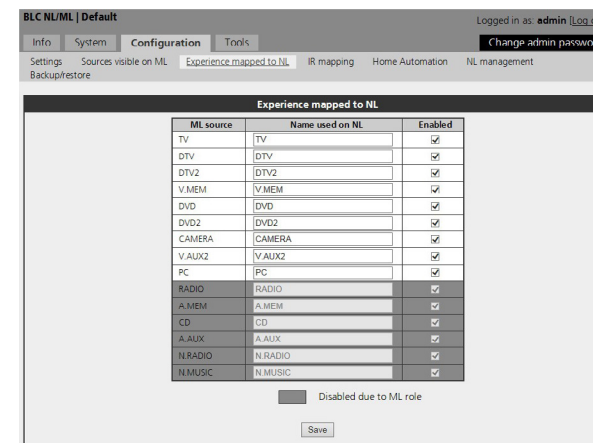
Name used on NL

Shows the source names used on the Network Link. The name will be visible in the source list menu on the Network Link product and it will be shown on the display when a button is pressed, e.g. DTV. It is possible to enter any name, e.g. Sky-Box.

Enabled

Possible to enable/disable a source.

- ! Remember to save the settings.



Configuration > Sources visible on ML (ML Role is AV Master)

Here is chosen, which network link source that is desired to be distributed to Master link.

ML source

Shows a list of available sources on Master Link retrieved from Network Link. Source mapping of Beo4 buttons from Master Link rooms to sources on the Network Link.

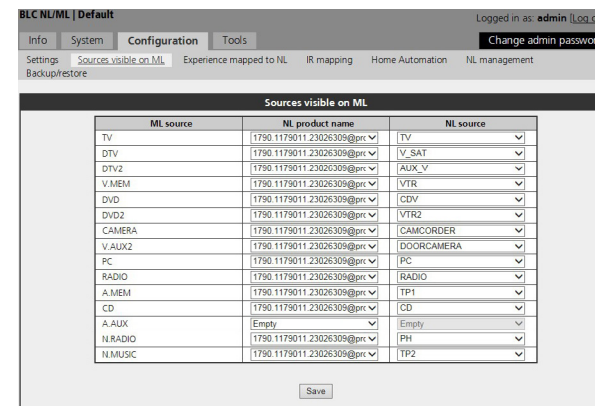
NL product name

Products connected to the Network Link will be visible in **NL product name** list.

NL source

Network Link sources connected to the Network Link will be visible in **NL source** list. It is possible to allocate a Network Link source to another Master Link source if required. This can be done in the drop down box.

- ! Products connected to the Network Link are detected automatically.
- ! Remember to save the settings.



Configuration > Experience mapped to NL (ML Role is AV Master)

In a setup where the BeoLink Converter NL/ML must have the ML Role AV Master, it will not be able to distribute any source on Network Link.

ML source

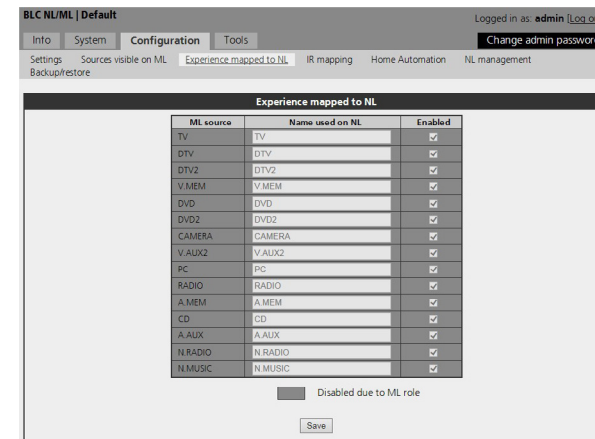
None is available due to the ML Role

Name used on NL

None is available due to the ML Role

Enabled

Is not available due to the ML Role.



Configuration > Sources visible on ML (ML Role is A Slave)

In a setup where the BeoLink Converter NL/ML must have the ML Role A Slave, it will not be able to distribute any source on Master Link.

ML source

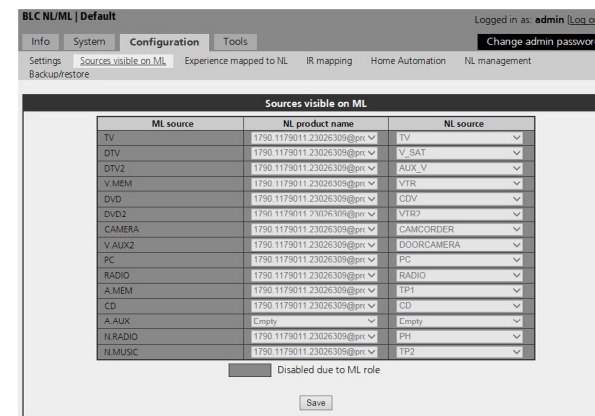
None is available due to the ML Role.

NL product name

None is available due to the ML Role.

NL source

None is available due to the ML Role.



Configuration > Experience mapped to NL (ML Role is A Slave)

Experience mapped to NL (Sources visible on NL), tells the Network Link products which Master Link sources should be visible in the **source list** menu on the Network Link products. You can also rename the Master Link sources.

ML source

Shows a list of available sources on Network Link retrieved from Master Link.

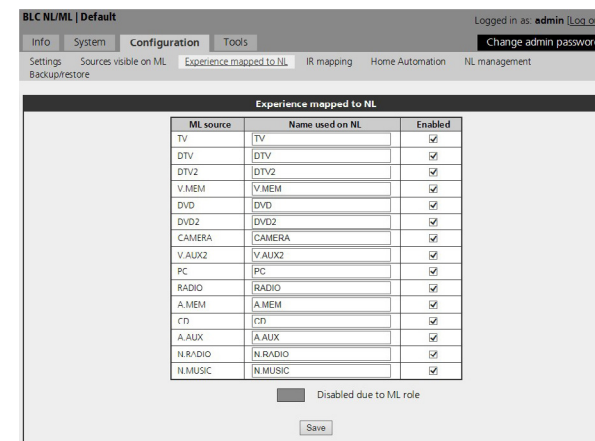
Name used on NL

Shows the source names used on the Network Link. The name will be visible in the **source list** menu on the Network Link product and it will be shown on the display when a button is pressed, e.g. CD. It is possible to enter any name, e.g. **Music**, **Favourites**, etc.

Enabled

Possible to enable/disable a source.

! Remember to save the settings.



Configuration > Sources visible on ML (ML Role is Source Center)

Here is chosen, which network link source that is desired to be distributed to Master link. See example 8 (Network Link and Master Link setup) on page 28 for further information about the ML role Source Center.

! The Source Center role can only be used if no BeoMaster 5 is installed on Master Link as Audio Master or Source Center (AudioMaster = No).

ML source

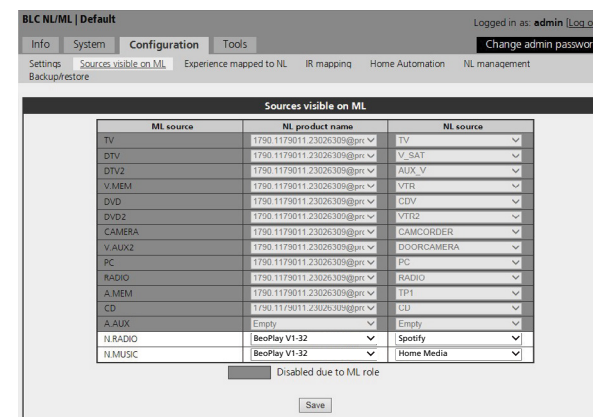
Shows a list of available sources on Master Link retrieved from Network Link. Source mapping of Beo4 buttons from Master Link rooms to sources on the Network Link.

NL product name

Products connected to the Network Link will be visible in NL product name list.

NL source

Network Link sources connected to the Network Link will be visible in NL source list. It is possible to allocate a Network Link source to another Master Link source if required. This can be done in the drop down box.



! Remember to save the settings.

Configuration > Experience mapped to NL (ML Role is Source Center)

Experience mapped to NL (Sources visible on NL), tells the Network Link products which Master Link sources should be visible in the source list menu on the Network Link products. You can also rename the Master Link sources.

ML source

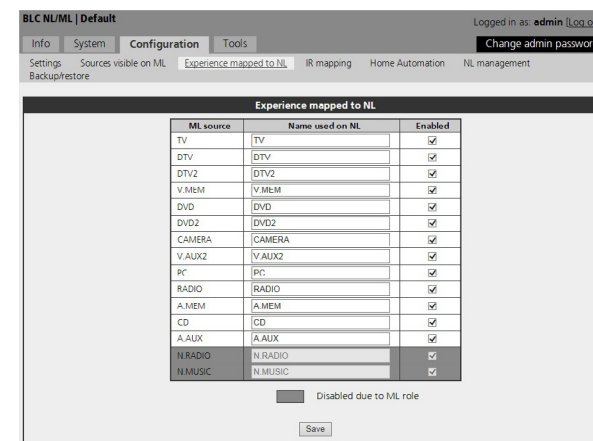
Shows a list of available sources on Network Link retrieved from Master Link.

Name used on NL

Shows the source names used on the Network Link. The name will be visible in the source list menu on the Network Link product and it will be shown on the display when a button is pressed, e.g. CD. It is possible to enter any name, e.g. Music.

Enabled

Possible to enable/disable a source.



! Remember to save the settings.

Configuration > IR mapping

Maps Local IR to any source - either Master Link or Network Link product.

IR command.

A list of IR commands.

NL product name

Products connected to the Network Link will be visible in **NL product name** list.

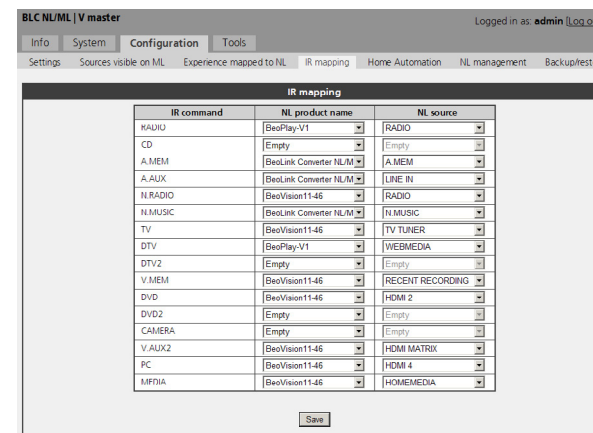
NL Source

NL sources connected to the Network Link. It is possible to allocate a NL source to another IR command if required. This can be done in the drop down box.

! To map a Master Link source the BeoLink Converter NL/ML has to be selected as a Network Link product.

! IR mapping settings are only relevant if Power Link speakers and IR receiver are installed as in example 1, 2, 4 and 5.

! Remember to save the settings.



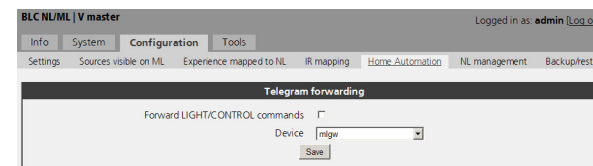
Configuration > Home Automation

Telegram forwarding

Forward **LIGHT/CONTROL** commands. If checkbox is checked then LIGHT/CONTROL IR telegrams sent to this product are forwarded to product specified in the **Device** box. To be used when there is LIGHT/CONTROL handler on Network Link.

! Home Automation settings are only relevant if IR receiver are installed as in example 1, 2, 4 and 5.

! Remember to save the settings.



Configuration > NL management

NL delay

Network delay, wired is a streaming delay that is caused by wired network. Used only if all Network Link products are connected with a wired connection.

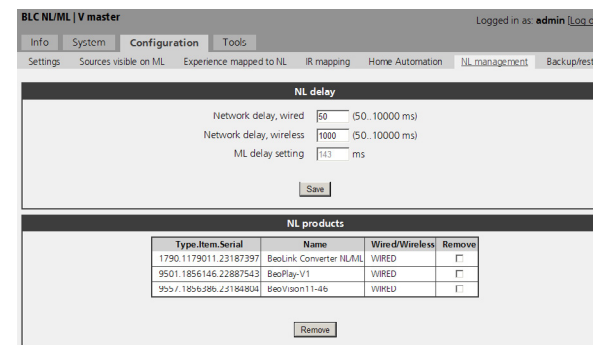
Network delay, wireless is a streaming delay that is caused by wireless network. Used when at least one of the Network Link products is connected via wireless connection.

ML delay setting is the total streaming delay that is used for streaming (max product delay + network related delay). ML Delay box delay has to be set as close as possible to this value. For further information about the NL/ML Delay Box, see [page 18](#).

! If using a wireless connection together with the NL/ML delay Box, then echo will not be eliminated.

NL products

Shows all known products in the network with type number, item number, serial number, name and the connection. It is possible to remove products that are not present in the network any more. To remove products set check mark in the **Remove** checkbox and press the **Remove** button. If a product is accidentally removed, then the product has to be rebooted to get back on the list.



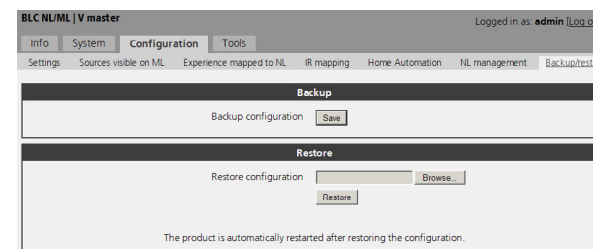
Configuration > Backup/restore

Backup

This function can be used for saving a back-up file of the configuration of the BeoLink Converter NL/ML on a PC.

Restore

The restore function can be used to restore the configuration of the BeoLink Converter NL/ML with a back-up file saved on a PC.



Setting up NL/ML Delay Box

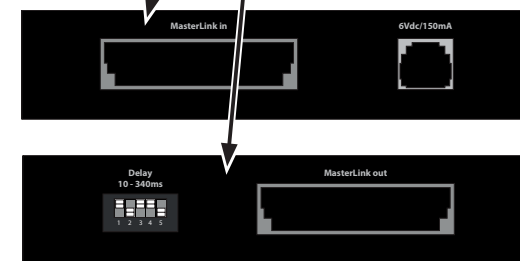
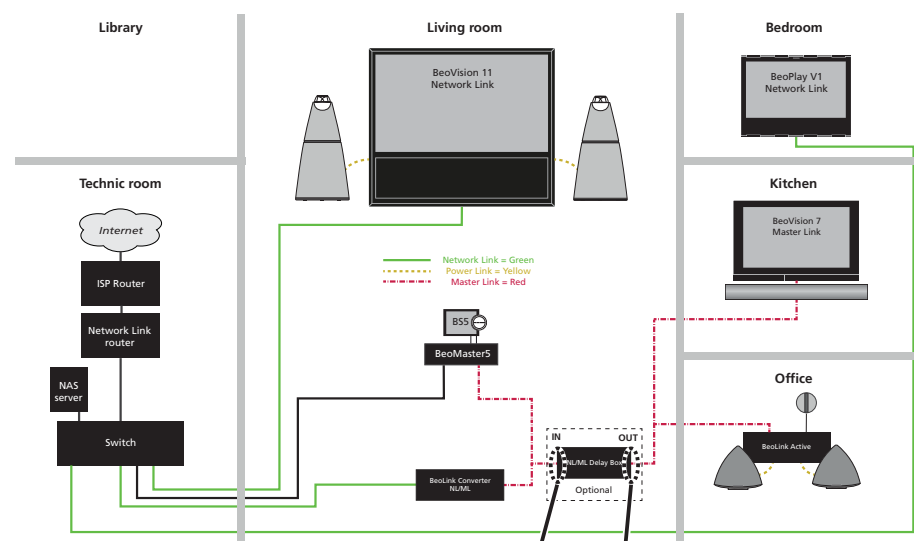
To prevent echo in a Network Link/Master Link setup, with a Master Link Audio Master in the living room (main room) and other Master Link products, it is possible to mount a NL/ML Delay Box. The sound can be synchronized by connecting an NL/ML Delay Box between the Audio Master and the Master Link products.

Installation

- Disconnect all products in the setup from mains.
- Connect Master Link cable from BeoLink Converter and Audio Master to **Master Link in** on the NL/ML Delay Box.
- Connect Master Link cable from Master Link products to **Master Link out** on the NL/ML Delay Box.
- Set up the dip switch on the NL/ML Delay Box. The dip switch setting is based on the **ML delay setting** value in the following menu on the BeoLink Converter NL/ML: **Configuration > NL management > NL Delay > ML delay setting**. Use the delay overview [page 19](#), to see the correct dip switch settings.

! If ML delay setting is outside the range (341 ms) of NL/ML Delay Box i.e. more than 1000 ms then go to the following menu on the BeoLink Converter NL/ML: Configuration > NL management > NL products and check if any products are listed with wireless status. If any products are listed with wireless status you have to do as follow:

1. Disable WLAN in these products
 2. Delete the products from the list
 3. Reboot the products
 4. Check that the rebooted product shows up as wired in the NL Products list.
- Connect the NL/ML Delay Box and the other products in the setup to mains.



Dip switch on NL/ML Delay Box

! *Known limitation in functionality:*

No solution for option 1-1 and 2-2 (speakers on Audio Master). Use setup from Example 4 for an echo free audio source solution.

To install an NL/ML Delay Box (8052438), remember to order a SMPS adaptor.

EU SMPS: 8040002 GB SMPS: 8040004 AUS SMPS: 8040006 US SMPS: 8040008 CN SMPS: 8040200

Option settings

Living room: BeoVision 11 in option 2 and BeoSound 5 in option 0.

Bedroom: BeoPlay V1 in option 2

Kitchen: BeoVision 7 in option 6

Office: BeoLink Active in option 6

Delay overview

If other delay values are required according to the **ML Delay setting** displayed in Network Link supported products, then actual dip switch setting can be found from this table.

Audio delay ms	Comments	LSB				MSB
	Down = 0 / Up = 1	DIP 1	DIP 2	DIP 3	DIP 4	DIP 4
10		0	0	0	0	0
21		1	0	0	0	0
31		0	1	0	0	0
42		1	1	0	0	0
53		0	0	1	0	0
63		1	0	1	0	0
74		0	1	1	0	0
85		1	1	1	0	0
95		0	0	0	1	0
106		1	0	0	1	0
117		0	1	0	1	0
127		1	1	0	1	0
138		0	0	1	1	0
149	Default setting	1	0	1	1	0
159		0	1	1	1	0

170		1	1	1	1	0
181		0	0	0	0	1
191		1	0	0	0	1
202		0	1	0	0	1
213		1	1	0	0	1
223		0	0	1	0	1
234		1	0	1	0	1
245		0	1	1	0	1
255		1	1	1	0	1
266		0	0	0	1	1
277		1	0	0	1	1
287		0	1	0	1	1
298		1	1	0	1	1
309		0	0	1	1	1
319		1	0	1	1	1
330		0	1	1	1	1
341		1	1	1	1	1

Table continues to the right..

BeoLink Converter NL/ML setup examples

Example 1 (Network Link without Master Link setup)

Sound synchronization in all rooms.
 Could also include a Master Link Gateway for home automation and BeoLink App control.

In this setup the BeoLink Converter NL/ML is used for active speakers (Power Link enabled).

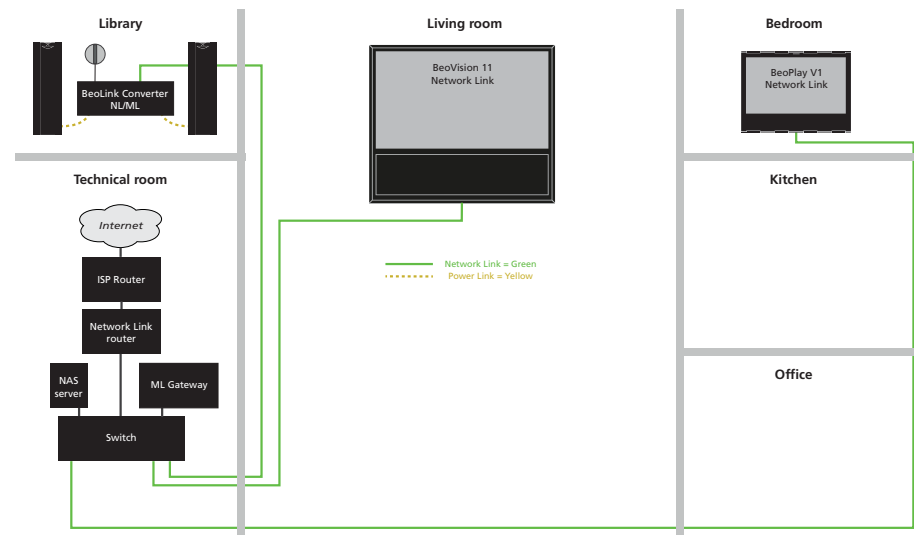
! To read more about this Network Link setup, see the installation Guide Network Link setup (without Master Link).

Configuration > Settings

MasterLink

ML enabled: Unchecked (MasterLink disabled)

ML role: None (not possible to change when ML enabled is unchecked)



Share speaker table

	Question in Network Link TV	Living room	Other rooms	Comments
Example 1	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	NO	NO	
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	-	-	

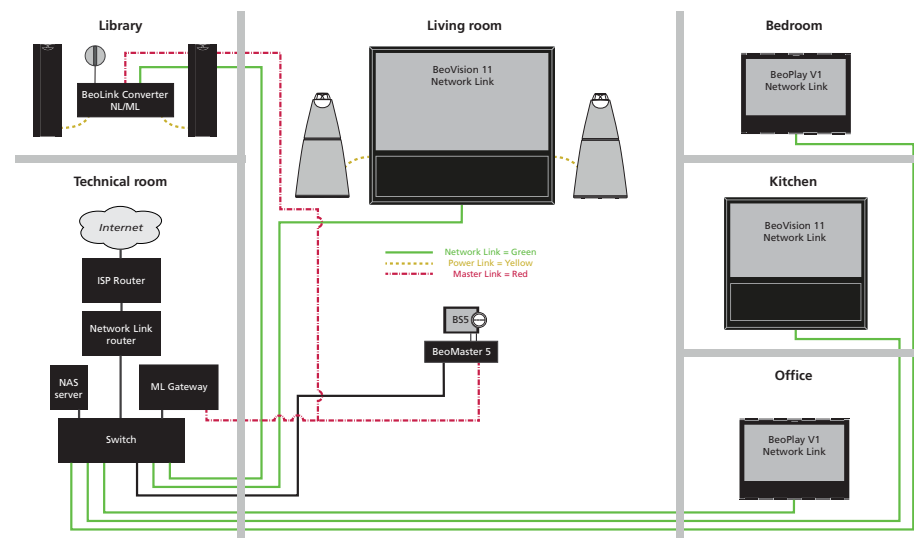
BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 1	BLC Library	BV11	BLC Library	To Power Link: <ul style="list-style-type: none"> - Video sources from living room (BV11) - AUX (line in) from local product To Network Link: <ul style="list-style-type: none"> - AUX (line in) from local product To Master Link: <ul style="list-style-type: none"> - None

Example 2 (Network Link and Master Link setup)

Multiple Network Link products in a system setup. All sources are synchronized across systems.

In this setup the BeoLink Converter NL/ML will be used for active speakers (Power Link enabled) and same time it will act like a converter between Master Link and Network Link.



Configuration > Settings

MasterLink
 ML enabled: Checked (MasterLink enabled)
 ML role: V Master

Share speaker table

	Question in Network Link TV	Living room	Other rooms	Comments
Example 2	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	YES	NO	Select whether or not the Audio Master (BeoMaster5) and not the BeoLink Converter NL/ML is in the same room as the TV.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	YES	-	Select whether or not the TV speakers should be shared and used as the only speakers for the Audio Master (BeoMaster5).

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 2	BLC Library	BV11	BLC Library	To Power Link: <ul style="list-style-type: none"> - Video sources from living room (BV11) - Audio sources from living room (BS5) - AUX (line in) from local product To Network Link: <ul style="list-style-type: none"> - Audio sources from living room (BS5) - AUX (line in) from local product To Master Link <ul style="list-style-type: none"> - Sound from video sources from living room (BV11)

Example 3 (Network Link and Master Link setup)

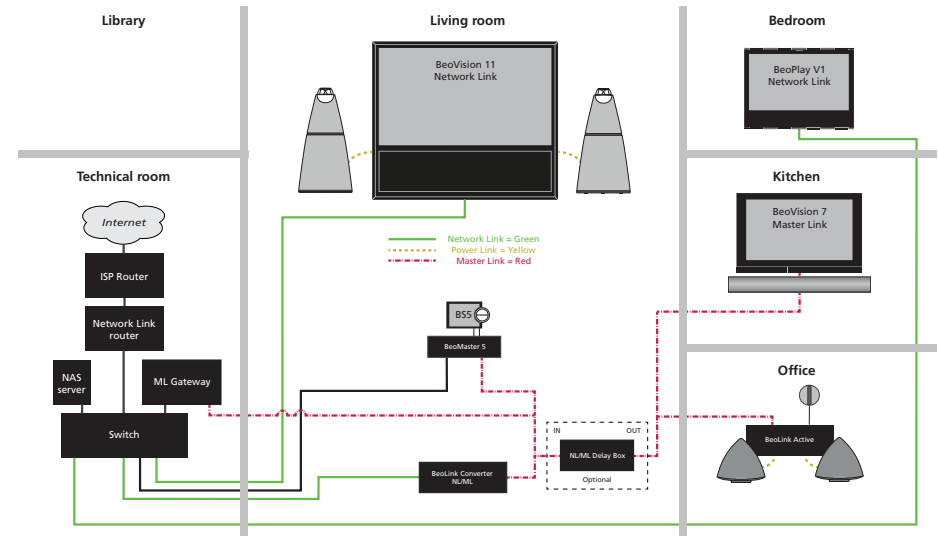
Synchronized sound distribution between all link rooms.

! The NL/ML Delay Box is optional. Mount a NL/ML Delay Box for echo free audio source distribution.

Configuration > Settings

MasterLink
 ML enabled: Checked (MasterLink enabled)
 ML role: V Master

Share speaker table



	Question in Network Link TV	Living room	Other rooms	Comments
Example 3	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	YES	NO	Select whether or not the Audio Master (BeoMaster5) and not the BeoLink Converter NL/ML is in the same room as the TV.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	YES	-	Select whether or not the TV speakers should be shared and used as the only speakers for the Audio Master (BeoMaster5).

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 3	BLC Living room	BV11	BLC Living room	To Power Link: - None To Network Link: - Audio sources from living room (BSS) - AUX (line in) from local product To Master Link - Sound from video sources from living room (BV11)

Example 4 (Network Link and Master Link setup)

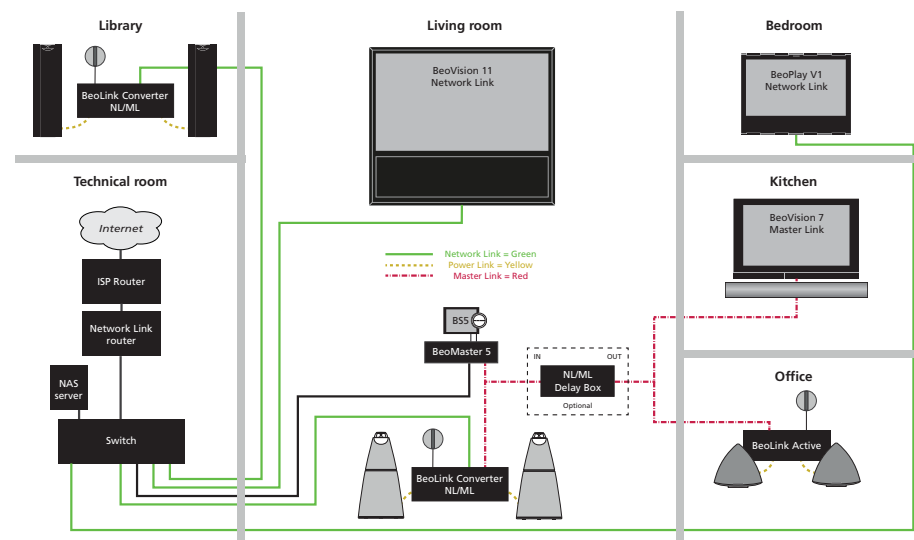
Echo if the speakers are connected to Audio Master, also when use of NL/ML Delay Box.
 Echo free when using audio speakers on BeoLink Converter NL/ML.

! The NL/ML Delay Box is optional. Mount a NL/ML Delay Box for echo free audio source distribution.

Configuration > Settings

MasterLink
 ML enabled: Checked (MasterLink enabled)
 ML role: V Master

Share speaker table



	Question in Network Link TV	Living room	Other rooms	Comments
Example 4	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	YES	NO	Select whether or not the Audio Master (BeoMaster5) and not the BeoLink Converter NL/ML is in the same room as the TV.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	NO	-	Select whether or not the TV speakers should be shared and used as the only speakers for the Audio Master (BeoMaster5).

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 4	BLC Living room	BLC Living room	BV11	To Power Link: <ul style="list-style-type: none"> - Video sources from living room (BV11) - Audio sources from living room (BS5) - AUX (line in) from local product To Network Link: <ul style="list-style-type: none"> - Audio sources from living room (BS5) - AUX (line in) from local product To Master Link <ul style="list-style-type: none"> - Sound from video sources from living room (BV11) ! Source select from BS5 menu cause BS5 source to start playing in BLC living room

	BLC	Primary	Secondary	Comments
Example 4	BLC Library	BV11	BLC Living room	To Power Link: <ul style="list-style-type: none">- Video sources from living room (BV11)- Audio sources from living room (BS5)- AUX (line in) from local product To Network Link: <ul style="list-style-type: none">- AUX (line in) from local product To Master Link <ul style="list-style-type: none">- None

Example 5 (Network Link and Master Link setup)

With a Master Link product in the main room, you get synchronized sound from audio sources in all link rooms. The BeoLink Converter NL/ML has to be set up as an audio slave in its menu. In the Bedroom you will have free access to sound distribution from either audio or video sources.

! The NL/ML Delay Box is optional. Mount an NL/ML Delay Box for echo free audio source distribution.

Configuration > Settings

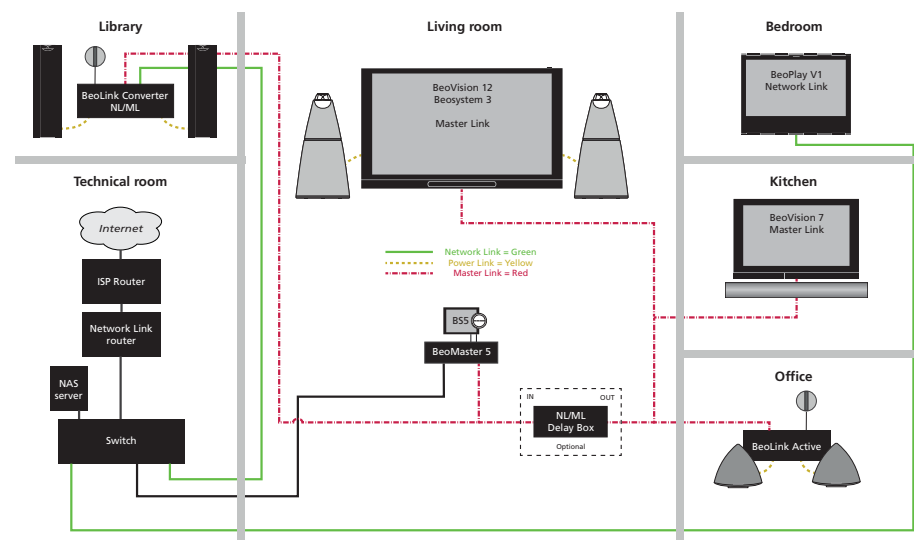
MasterLink
 ML enabled: Checked (MasterLink enabled)
 ML role: A Slave

Share speaker table

	Question in Network Link TV	Living room	Other rooms	Comments
Example 5	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	-	NO	Living room Master TV (BV12) share speakers with Audio Master (BeoMaster 5), because of BLC primary settings.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	-	-	

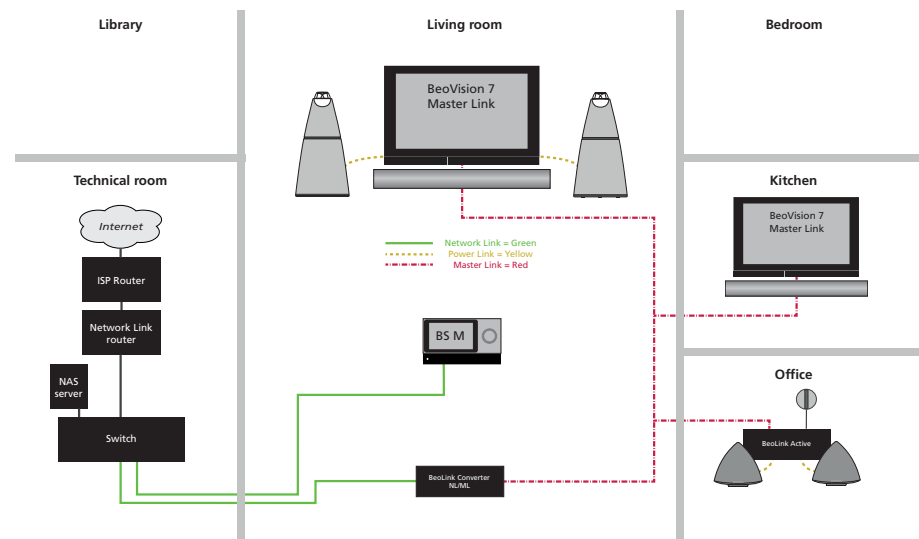
BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 5	BLC Library	BLC Library	Beoplay V1	To Power Link: <ul style="list-style-type: none"> - Video sources from living room (BV12) - Audio sources from living room (BS5) - AUX (line in) from local product To Network Link: <ul style="list-style-type: none"> - Sound from video sources from living room (BV12) - Audio sources from living room (BS5) - AUX (line in) from local product To Master Link <ul style="list-style-type: none"> - None



Example 6 (Network Link and Master Link setup)

Synchronized sound distribution between all link rooms.



Configuration > Settings

MasterLink
 ML enabled: Checked (MasterLink enabled)
 ML role: A Master

Share speaker table

	Question in Network Link TV	Living room	Other rooms	Comments
Example 6	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	-	-	Living room Master TV (BV7) share speakers with Audio Master (BeoSound Moment), because of BLC primary settings.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	-	-	

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 6	BLC Living room	BS Moment	BLC Living room	To Power Link: - None To Network Link: - None To Master Link - Audio sources from living room (BS Moment)

Example 7 (Network Link and Master Link setup)

Synchronized sound distribution between all link rooms.

! Be aware of that it is necessary to have a ML Power Master on Master Link, when the BeoLink Converter NL/ML has the ML role AV Master (Audio Video Master). In this setup the ML Power Master is the BeoVision 7.

Additional information about ML Power Master may be found on BeoWise. (BeoWise > Link > BeoLink > BeoLink Converter NL/ML > TIPS > Compatible Bang & Olufsen Master Link products).

Configuration > Settings

MasterLink

ML enabled: Checked (MasterLink enabled)

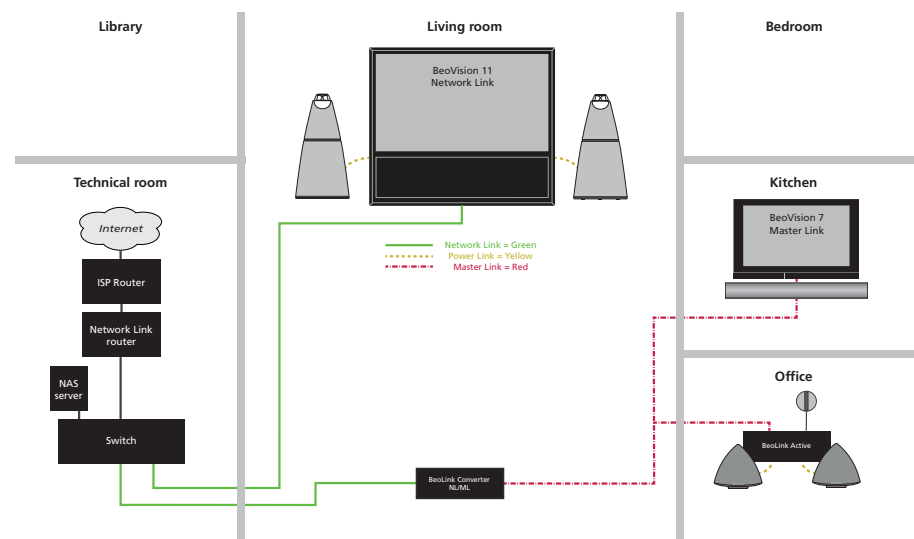
ML role: AV Master

Share speaker table

	Question in Network Link TV	Living room	Other rooms	Comments
Example 7	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	NO	-	Select whether or not the Audio Master (in this setup no Audio Master) and not the BeoLink Converter NL/ML is in the same room as the TV.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	-	-	

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 7	BLC Living room	BV11	BLC Living room	To Power Link: - None To Network Link: - AUX (line in) from local product To Master Link: - Sound from audio and video sources from living room (BV11)



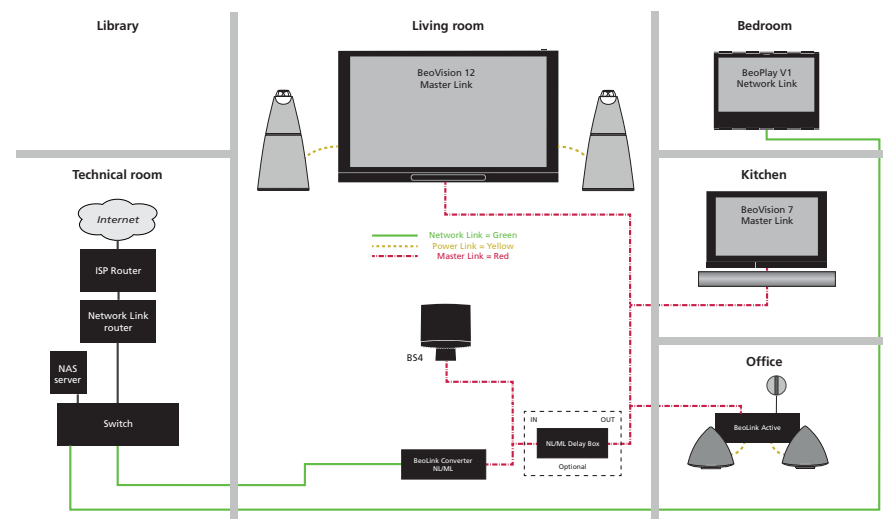
Example 8 (Network Link and Master Link setup)

! Be aware of that in some situations there will be echo. See the table below.

Sources	Network Link		Master Link	
	Audio	Video	Audio	Video
	N.RADIO, N.MUSIC	All video sources	CD, Radio, A. Mem, etc.	All video sources
With Delay box	ECHO	NO ECHO	NO ECHO	ECHO
Without Delay box	NO ECHO	NO ECHO	ECHO	ECHO

Configuration > Settings

MasterLink
 ML enabled: Checked (MasterLink enabled)
 ML role: Source Center



! The Source Center role can only be used if no BeoMaster 5 is installed on Master Link as Audio Master or Source Center (AudioMaster = No).

Share speaker table

	Question in Network Link TV	Living room	Other rooms	Comments
Example 8	IS BeoLink Converter NL/ML IN SAME ROOM AS THIS TELEVISION?	-	NO	Living room Master TV (BV12) share speakers with Audio Master (BeoSound 4), because of BLC primary settings.
	DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?	-	-	

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 8	BLC Living room	BLC Living room	BeoPlay V1	To Power Link: <ul style="list-style-type: none"> - None To Network Link: <ul style="list-style-type: none"> - Sound from video sources from living room (BV12) - Audio sources from living room (BS4) - AUX (line in) from local product To Master Link: <ul style="list-style-type: none"> - Sound from video and audio (Media, Radio) sources from bedroom (BeoPlay V1) ! Media and Radio from BeoPlay V1 can be mapped to N.MUSIC and N.RADIO on Master Link.

BeoLink Converter NL/ML setup guide (Example 3)

This is a setup guide to Example 3 (Network Link and Master Link setup) [page 22](#), just without the Master Link Gateway. This setup with the specific settings is not a complete finish setup. This setup can be customized depending on the products and sources the customer has connected.

*! Set up sources in other NetWork Link products before setting up BeoLink Converter NL/ML. As the BeoLink Converter NL/ML makes initial source settings based on the products selected in the menus **Connect to (primary)** and **Connect to (secondary)**. It can save a lot of manual work.*

Set up the Beolink Converter NL/ML

Access the BeoLink Converter NL/ML.

- Connect a computer to the Network Link router.
- Access the router and check the DHCP Reservation to find the current IP-address for the BeoLink Converter NL/ML (It will be named BLC-<serial number>).
- Leave the DHCP Reservation menu and enter the BeoLink Converter NL/ML IP-address in the address line of the Internet Browser. If the computer has Bonjour the BeoLink Converter NL/ML can be found in same way as on an iPhone/iPad, see [page 8](#).
- Access the BeoLink Converter NL/ML with the default **username** admin and **password** admin. (The setup app for smartphones/tablets can also be used).

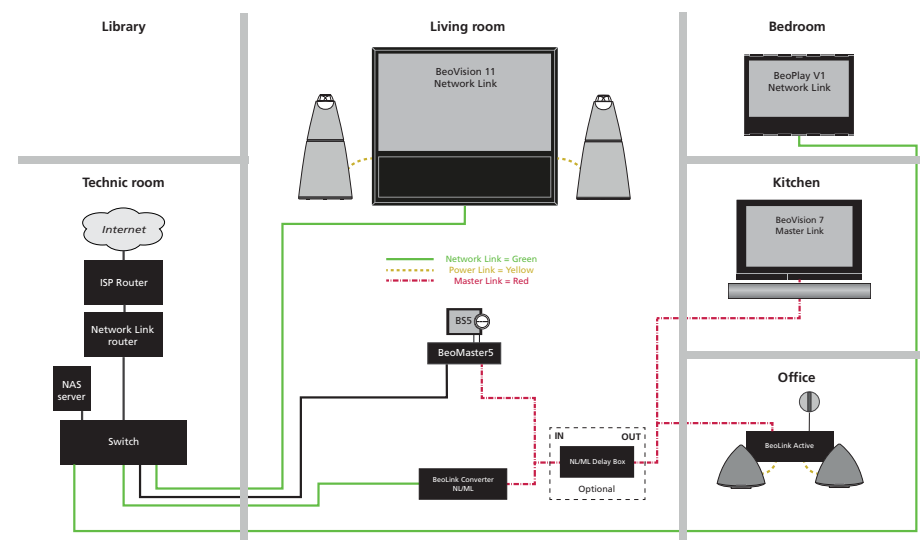
Go to the menu: **Configuration > Settings**

- **ML Role:** Select V Master and press the **Save** button.
(The BeoLink Converter NL/ML has this role seen from the Master Link side. The **ML Role** is default set to V Master).
- **Connect to (primary):** Select Beovision 11 and press the **Save** button. (Select a product the BeoLink Converter NL/ML must be connected to).
- **NL Alias:** Leave the default name or select another desired name and press the **Save** button. (Select a name to the BeoLink Converter NL/ML).

Go to the menu: **Configuration > Sources visible on ML**

Only change the following settings if you wish other sources than those there already have been chosen in Beovision 11.

- **NL product name:** Select which product to be distributed from.
- **NL source:** Select which source on the specific Network Link product to be distributed.
- Press the **Save** button to store the settings.



Go to the menu: **Configuration > Experience mapped to NL**

- **Name used on NL:** Select the name N.RADIO for N.RADIO, N.MUSIC for N.MUSIC and A.MEM for A.MEM (Select a source name. This will be visible on the TV screen when a button is pressed).
- **Enabled:** Deselect CD and RADIO (Possible to enable/disable a source).
- Line In will always be available on NL products.
- Press the **Save** button to store the settings.

Set up the Living room TV (BeoVision 11)

Turn on the TV and go to the **PRODUCT INTERGRATION** menu. (**SETUP > PRODUCT INTERGRATION**).

- **LINK TO OTHER PRODUCTS:** Select BeoLink Converter NL/ML (Select the product to be distributed from).
 - **IS BeoLink Converter NL/ML IN THE SAME ROOM AS THIS TELEVISION?:** Select YES.
 - **DO YOU WANT TO USE THE TV SPEAKERS AS THE ONLY SPEAKERS FOR BeoLink Converter NL/ML?:** Select YES.
- **VM OPTION:** Select 2. (This setting is only relevant for Beo4 remote).
- Save the settings and check now the **Source list** menu, it has been updated with N.MUSIC, N.RADIO and A.MEM.

*! These settings above is unnecessary if the integration is set in the **Connect to (primary)** menu in the BeoLink Converter NL/ML previous.*

Set up the Bedroom TV (BeoPlay V1)

Turn on the TV and go to the **PRODUCT INTERGRATION** menu. (**SETUP > PRODUCT INTEGRATION**).

- **LINK TO OTHER PRODUCTS:** Select BeoLink Converter NL/ML (Select the product to be distributed from).
 - **IS BeoLink Converter NL/ML IN THE SAME ROOM AS THIS TELEVISION?:** Select NO.
- **VM OPTION:** Select 2 (This setting is only relevant for Beo4 remote).
- Save the settings and check now the **Source list** menu, it has been updated with N.MUSIC, N.RADIO and A.MEM.

Set up the kitchen TV (BeoVision 7)

Select option 6 in BeoVision 7

Set up the office product (BeoLink Active)

Select option 6 in BeoLink Active

Conclusion

In the living room it is possible listen to sources from BeoSound 5, BeoVision 11 and from AUX (line in) on BeoLink Converter NL/ML.

In the kitchen and office it is now possible listen to sources from BeoSound 5 or BeoVision 11.

In the bedroom it is now possible listen to sources from BeoSound 5. (This can be changed to BeoVision 11 by changing the settings in the **PRODUCT INTEGRATION** menu on the TV).

! The NL/ML Delay Box is optional. Mount a NL/ML Delay Box for echo free audio source distribution.

BeoLink Converter NL/ML setup guide (Example 7)

This is a setup guide to Example 7 (Network Link and Master Link setup) [page 27](#). This setup with the specific settings is not a complete finish setup. This setup can be customized depending on the products and sources the customer has connected.

*! Set up sources in other NetWork Link products before setting up BeoLink Converter NL/ML. As the BeoLink Converter NL/ML makes initial source settings based on the products selected in the menus **Connect to (primary)** and **Connect to (secondary)**. It can save a lot of manual work.*

Set up the BeoLink Converter NL/ML

Access the BeoLink Converter NL/ML.

- Connect a computer to the Network Link router.
- Access the router and check the DHCP Reservation to find the current IP-address for the BeoLink Converter NL/ML (It will be named BLC-<serial number>).
- Leave the DHCP Reservation menu and enter the BeoLink Converter NL/ML IP-address in the address line of the Internet Browser. If the computer has Bonjour the BeoLink Converter NL/ML can be found in same way as on an iPhone/iPad, see [page 8](#).
- Access the BeoLink Converter NL/ML with the default **username** admin and **password** admin. (The setup app for smartphones/tablets can also be used).

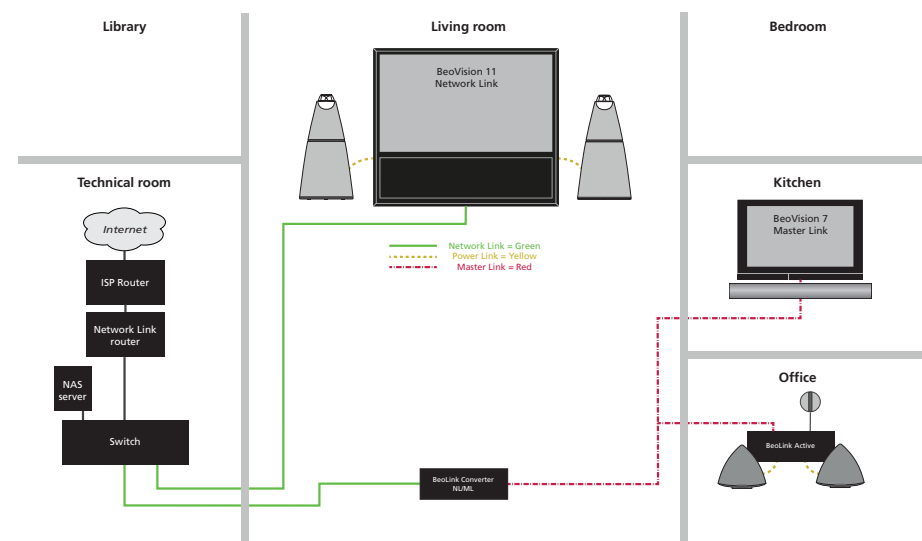
Go to the menu: **Configuration > Settings**

- **ML Role:** Select AV Master and press the **Save** button. (The BeoLink Converter NL/ML has this role seen from the Master Link side. The **ML Role** is default set to V Master).
- **Connect to (primary):** Select Beovision 11 and press the **Save** button. (Select a product the BeoLink Converter NL/ML must be connected to).
- **NL Alias:** Leave the default name or select another desired name and press the **Save** button. (Select a name to the BeoLink Converter NL/ML).

Go to the menu: **Configuration > Sources visible on ML**

Only change the following settings if you wish other sources than those there already have been chosen in Beovision 11.

- **NL product name:** Select which product to be distributed from.
- **NL source:** Select which source on the specific Network Link product to be distributed.
- Press the **Save** button to store the settings.



Set up the Living room TV (BeoVision 11)

Select option 2 in BeoVision 11. (This setting is only relevant for Beo4 remote).

Set up the kitchen TV (BeoVision 7)

Select option 6 in BeoVision 7.

Set up the office product (BeoLink Active)

Select option 6 in BeoLink Active.

Conclusion

In the living room it is possible listen to sources from AUX (line in) on BeoLink Converter NL/ML.
In the kitchen and office it is now possible listen to sources from BeoVision 11.

BeoLink Converter NL/ML (additional menus)

Info > Product Info

The Product Info contains the following information:

- **Product ID**
- Serial number
- Item number
- Type number

- **Product HW info** (Contains information about the hardware).
- Name: BeoLink Converter NL/ML
- HW variant: Version F

- **Small Engine HW info** (Hardware information about the Small Engine).
- HWD
- PCB version
- Variant
- BOM (Bill Of Material) version
- Configuration word

The screenshot shows the 'Product info' page in the BLC NL/ML web interface. The page is titled 'BLC NL/ML | Default' and shows the user is logged in as 'admin'. The navigation menu includes 'Info', 'System', 'Configuration', and 'Tools'. The 'Product info' sub-menu is active, showing 'Product info', 'Project info', 'SW versions', and 'Service counters'. The main content area displays the following information:

Product ID	
Serial number	23406200
Item number	1179011
Type number	1790

Product HW info	
Name	BeoLink Converter NL/ML
HW variant	Version F

SmallEngine HW info	
HWD	0
PCB version	E
Variant	8004752
BOM version	K
Configuration word	2120

Info > Project Info

The project info can be used to keep information about the project, which can be useful if it should be necessary to restore the settings.

- **Project name**
Any name, number, etc.

- **Customer**
Name of the customer who owns the BeoLink Converter NL/ML.

- **Installer**
Name of the technician or installer responsible for the programming.

- **Installer contact info**
For instance the phone number of the programmer.

The screenshot shows the 'Project info' page in the BLC NL/ML web interface. The page is titled 'BLC NL/ML | Default' and shows the user is logged in as 'admin'. The navigation menu includes 'Info', 'System', 'Configuration', and 'Tools'. The 'Project info' sub-menu is active, showing 'Product info', 'Project info', 'SW versions', and 'Service counters'. The main content area displays a form with the following fields:

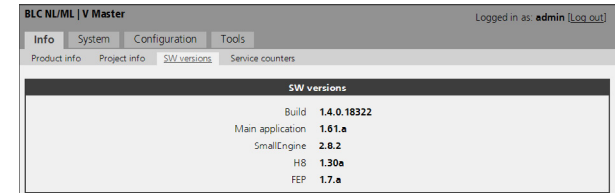
Project info	
Project name	<input type="text" value="Default"/>
Customer	<input type="text"/>
Installer	<input type="text"/>
Installer contact info	<input type="text"/>

There is a 'Save information' button at the bottom of the form.

Info > SW Versions

SW Versions gives information about the actual software in the BeoLink Converter NL/ML.

- **Build**
The build is a packet containing all the software.
- **Main application**
Software version of the application software.
- **SmallEngine**
Software version of the software for the Small Engine.
- **H8**
Software version of the software for the H8 microprocessor.
- **FEP**
Software version of the software for the Front-End Processor.

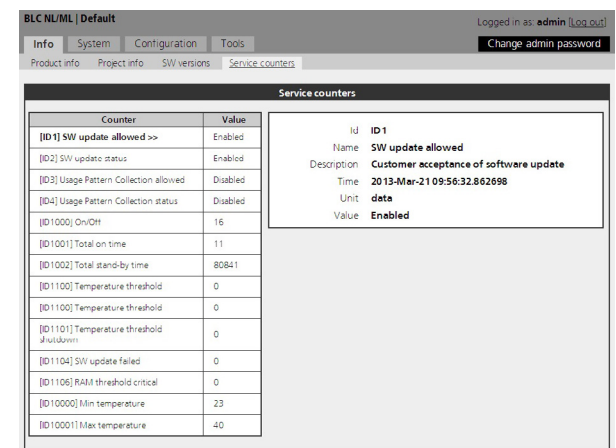


Info > Service Counters

The Service Counters gives information about the use of the BeoLink Converter NL/ML, such as:

- **Total on time**
Value indicates the minutes the BeoLink Converter NL/ML has been switched on.
- **Min temperature and Max temperature**
Indicates the minimum and maximum temperature inside the product.

With a click on any counter-name more detailed information will be visible in the box.



System > Network

The Network menu is used to set up the network settings to adapt to the actual network to which the BeoLink Converter NL/ML is connected.

The BeoLink Converter NL/ML is delivered from the factory with DHCP enabled to be able to obtain the IP-address automatically.

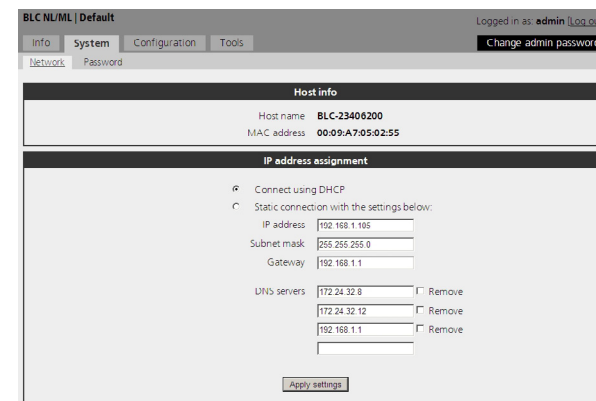
All the network settings can be changed in the Network Menu. It is possible to reset all the network settings by using the setup button on the socket panel.

Depending on the actual network it might be necessary to change the IP-address in order to adapt to the network in range.

The other networks settings in the Network Menu must also (if necessary), be changed to match the router settings.

To determine the network settings, the router in the network must be accessed. If the DHCP server in the router is enabled the BeoLink Converter NL/ML can use a fixed IP-address out of the DHCP range. If the DHCP is disabled in the router, the IP-address must be set up manually in the Network Menu. The first three octets in the IP-address must be the same digits as in the router. The settings the for IP address and subnet mask must match the actual subnet range.

! When new settings have been added, the PC with the web browser must be re-booted to be able find the new IP-address. If any problems should occur in finding the BeoLink Converter NL/ML, reset to the Network Settings.

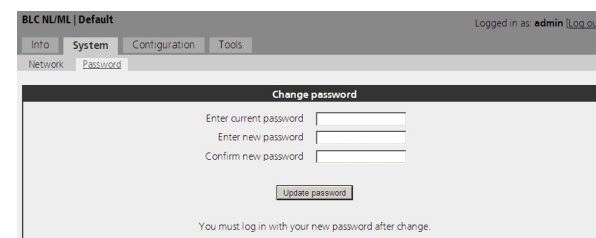


System > Password

The Password menu makes it possible to change the password, which is used to access the web-based user interface. To access the web-based user interface **admin** must always be used as the user name. The default password is also **admin**.

It is recommended to change the password because the BeoLink Converter NL/ML is connected in a LAN with access to the Internet. This is to prevent intruders from the outside to get access to the BeoLink Converter NL/ML.

If the password is forgotten it is possible to make a reset to **Factory default** by using the setup button on the socket panel, see [page 38](#).

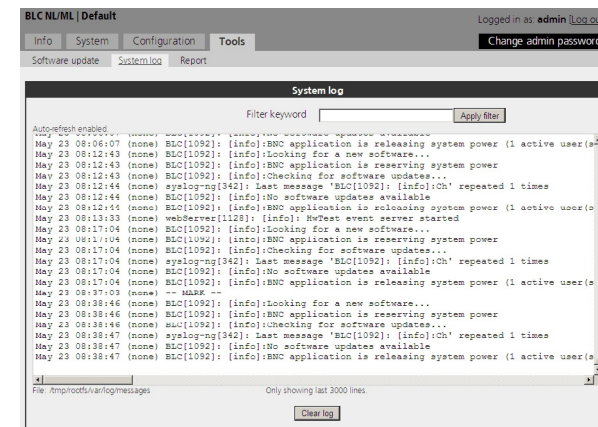


Tools > System Log

The System Log is able to show system messages such as application errors and critical system errors concerning the interaction between the BeoLink Converter NL/ML and devices connected. The menu can be used to:

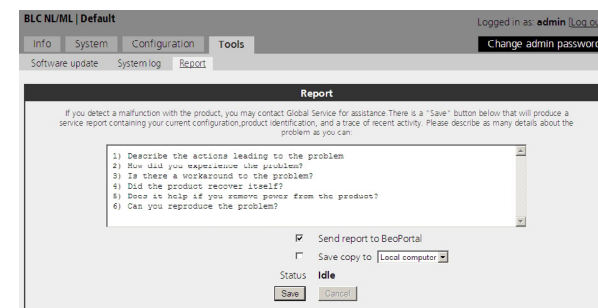
- verify the connection to connected devices, errors will be shown.
- check of incoming protocol connections.

! The size of the system log is limited, which means that old message will be deleted when new messages appear. System log is cleared after reboot. Remember to save the log before rebooting in case of a problem.



Tools > Report

If a malfunction occurs in the BeoLink Converter NL/ML it is possible to contact Global Service for assistance via the **Report** menu. A description of the malfunction can be made and when the save button is pressed the description and a report, with the current configuration of the BeoLink Converter NL/ML will be transferred to the BeoPortal. The report can be sent to the BeoPortal via the Internet or it can be stored on a computer, if the computer is connected to the Network Link Router or directly to the BeoLink Converter NL/ML.



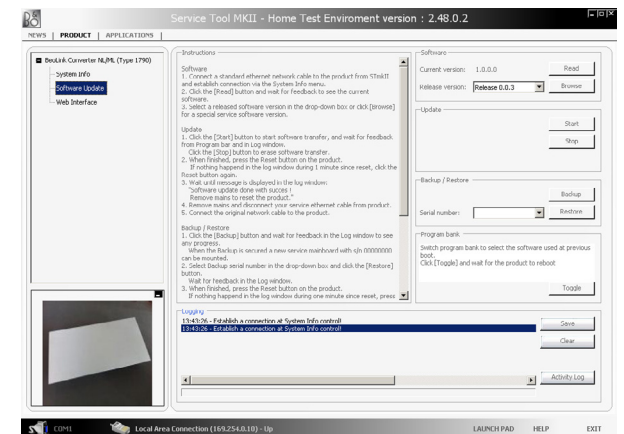
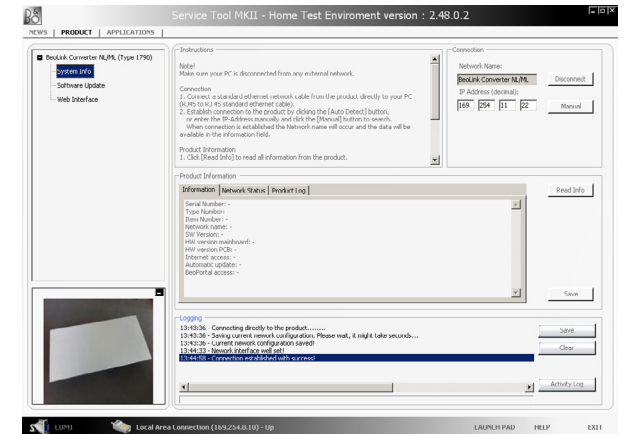
ServiceTool

The PC with the ServiceTool application must be connected directly to the BeoLink NL/ML Converter with an Ethernet cable. The ServiceTool is able to detect the BeoLink NL/ML Converter automatically.

It is also possible to enter the IP address 169.254.11.22 and make a manual connection to BeoLink NL/ML Converter.

The ServiceTool contains the following functions:

- Read out of product information
- Read out of network status
- Log files detection
- Software update
- Backup/restore of the configurations
- Access to the Web menu



Appendix

Setup button function & LED feedback

The setup button can be used for several functions during normal operation of the BeoLink Converter NL/ML.

- To select a function, the setup button must be pressed and held until the desired function has been reached. The number of times the LED flashes red is corresponding to the actual function. When the setup button is released and the LED starts flashing red, the setup button must be pressed once within 3 seconds to confirm the function. (Some functions do not require confirmation). The LED will change to orange to indicate that the selected function is being carried out. The LED goes off for one second, then the LED flashes green <N> times corresponding with the function number just performed and at last the LED goes off (normal operation).

Example no. 7 (Reset password)

- Press and hold the setup button until the LED has flashed red 7 times. Now confirm the function within 3 seconds by pressing the setup button once. The LED will now change to orange to indicated that the selected function is being carried out.

No. - Function	Confirm	Description
0 - Initial escape	NO	Do nothing (before LED indicator flashes first time)
1 - A Slave (Audio Slave)	Within 3 seconds	ML Role seen from Master Link side
2 - A Master (Audio Master)	Within 3 seconds	ML Role seen from Master Link side
3 - V Master (Video Master)	Within 3 seconds	ML Role seen from Master Link side (default setting)
4 - AV Master (Audio Video Master)	Within 3 seconds	ML Role seen from Master Link side
5 - Factory default	Within 3 seconds	Delete configuration - factory default installed
6 - Power up Web	Within 3 seconds	Power up Web server (main processor power up)
7 - Reset password	Within 3 seconds	Admin and User password to factory default
8 - Fixed adress	Within 3 seconds	Enables the default fixed IP adress
9 - Dynamic adress	Within 3 seconds	Enables DHCP - dynamic IP adress
10 - ML Power safe	Within 3 seconds	Not implemented
11 - Escape	NO	Do nothing (LED indicator red)

LED indicattor	Description
Off	Setup button pressed (function 0)
Flashes red once	Function 1 selected
Flashes red twice	Function 2 selected
<N> red flashes	Function <N> selected
Solid red	Escape
Fast flashing red	Waiting for confirmation (after some functions)
Solid orange	The selected operation is being performed. When done the LED is 1 second off and then followed by the confirmation pattern.
Fast flashing green	Confirmation pattern. Flashes <N> times corresponding with function no. just performed. 1 second off and then solid green.

ML Roles description and overview

The selection of ML Role depends on which products (roles) is already on the Master Link. Master Link can only have one Audio Master (A Master) and one Video Master (V Master). The A Master is solely responsible for distributing audio sources on Master Link and the V Master is solely responsible for distributing sound from video sources on Master Link.

As starting point for each of the following 5 examples we have a pure Master Link setup with BeoVision 7 (the V Master) and BeoMaster/BeoSound 5 (the A Master). (See fig. 1).

Fig. 2 shows the menu **Sources visible on ML** in the different ML Roles. **ML source** shows a list of available sources on Master Link retrieved from Network Link. The greyed out sources are not available on the Master Link due to the ML role.

Fig. 3 shows the menu **Experience mapped to NL** in the different ML Roles. **ML source** shows a list of available sources on Network Link retrieved from Master Link. The greyed out sources are not available on the Network Link due to the ML role.

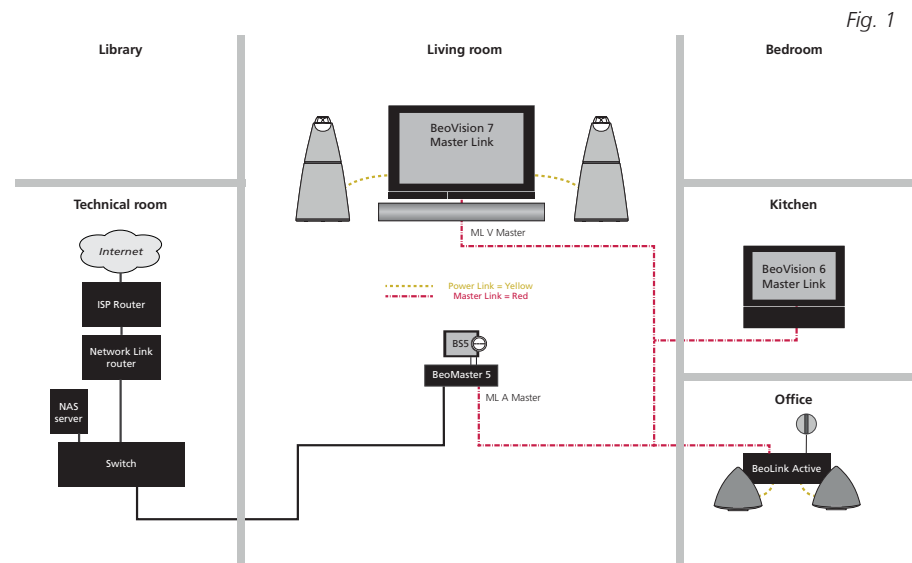


Fig. 1

Fig. 2

Sources visible on ML		Sources visible on ML		Sources visible on ML		Sources visible on ML		Sources visible on ML	
ML source	ML source	ML source	ML source	ML source	ML source	ML source	ML source	ML source	ML source
TV	TV	TV	TV	TV	TV	TV	TV	TV	TV
DTV	DTV	DTV	DTV	DTV	DTV	DTV	DTV	DTV	DTV
DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2
V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM
DVD	DVD	DVD	DVD	DVD	DVD	DVD	DVD	DVD	DVD
DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2
CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA
V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2
PC	PC	PC	PC	PC	PC	PC	PC	PC	PC
RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO
A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM
CD	CD	CD	CD	CD	CD	CD	CD	CD	CD
A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX
N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO
N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC

A Slave V Master A Master AV Master Source Center

■ Disabled due to ML role

Fig. 3

Experience mapped to NL		Experience mapped to NL		Experience mapped to NL		Experience mapped to NL		Experience mapped to NL	
ML source	ML source	ML source	ML source	ML source	ML source	ML source	ML source	ML source	ML source
TV	TV	TV	TV	TV	TV	TV	TV	TV	TV
DTV	DTV	DTV	DTV	DTV	DTV	DTV	DTV	DTV	DTV
DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2	DTV2
V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM	V.MEM
DVD	DVD	DVD	DVD	DVD	DVD	DVD	DVD	DVD	DVD
DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2	DVD2
CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA	CAMERA
V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2	V.AUX2
PC	PC	PC	PC	PC	PC	PC	PC	PC	PC
RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO	RADIO
A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM	A.MEM
CD	CD	CD	CD	CD	CD	CD	CD	CD	CD
A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX	A.AUX
N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO	N.RADIO
N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC	N.MUSIC

A Slave V Master A Master AV Master Source Center

■ Disabled due to ML role

Example: A Slave

If customers wants to add a BeoPlay V1 on Network Link. Then it should be connected to the Master Link system through a BeoLink Converter NL/ML. (See fig. 4).

As both BeoVision 7 (the V Master) and BeoMaster/ BeoSound 5 (the A Master) is retained on the Master Link, then the BeoLink Converter NL/ML cannot take neither the A Master or the V Master role. It have to take the role A Slave, where it will not be able to distribute any source on Master Link. In the BeoLink Converter NL/ML menu **Sources visible on ML**, no sources can be selected. (See fig. 5).

As both BeoVision 7 (the V Master) and BeoMaster/ BeoSound 5 (the A Master) is present on the Master Link, then the BeoLink Converter NL/ML can distribute any source from Master Link to Network Link. In the BeoLink Converter NL/ML menu **Experience mapped to NL**, all sources can be selected. (See fig. 6).

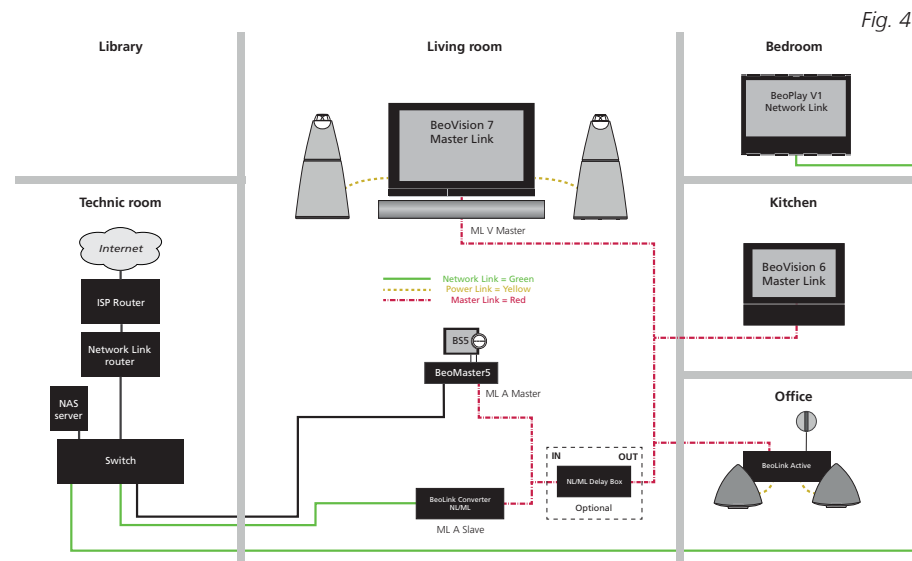


Fig. 4

! To avoid echo on audio sources between Network Link and Master Link rooms an optional delay box can be added.

Disabled due to ML role

Fig. 5

Sources visible on ML	
Source	Role
TV	Disabled
DTV	Disabled
DTV2	Disabled
V.MEM	Disabled
DVD	Disabled
DVD2	Disabled
CAMERA	Disabled
V.AUX2	Disabled
PC	Disabled
RADIO	Disabled
A.MEM	Disabled
CD	Disabled
A.AUX	Disabled
N.RADIO	Disabled
N.MUSIC	Disabled

A Slave

Fig. 6

Experience mapped to NL	
Source	Role
TV	Available
DTV	Available
DTV2	Available
V.MEM	Available
DVD	Available
DVD2	Available
CAMERA	Available
V.AUX2	Available
PC	Available
RADIO	Available
A.MEM	Available
CD	Available
A.AUX	Available
N.RADIO	Available
N.MUSIC	Available

A Slave

Example: V Master

If customers wants to replace the BeoVision 7 with a BeoVision 11 on Network Link. Then BeoVision 11 should be connected to the Master Link system through a BeoLink Converter NL/ML. (See fig. 7).

As BeoVision 7 (the V Master) is removed from the Master Link, then the BeoLink Converter NL/ML can take the V Master role to be able to distribute sound from video sources from BeoVision 11 (or Network Link in general) to the Master Link. In the BeoLink Converter NL/ML menu **Sources visible on ML**, only video sources can be selected. (See fig. 8).

As BeoVision 7 (the V Master) is removed from the Master Link, then the BeoLink Converter NL/ML can't distribute sound from any video source from Master Link to Network Link. In the BeoLink Converter NL/ML menu **Experience mapped to NL**, no video sources can be selected. (See fig. 9).

! To avoid echo on audio sources between Network Link and Master Link rooms an optional NL/ML Delay Box can be added.

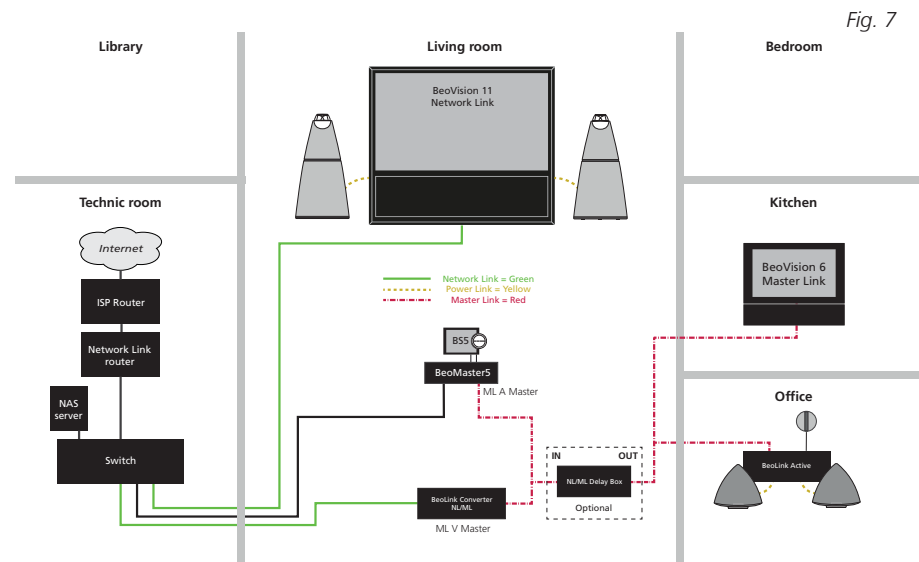


Fig. 7

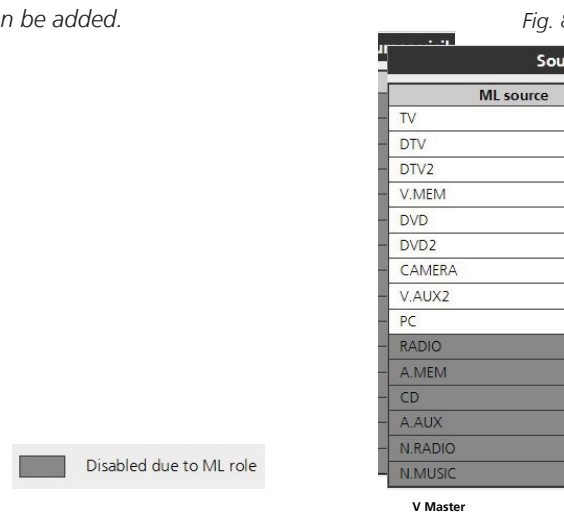


Fig. 8

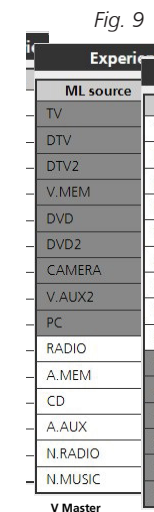


Fig. 9

Example: A Master

If customers wants to replace the BeoMaster/BeoSound 5 with a BeoSound Moment. Then BeoSound Moment should be connected to the Master Link system through a BeoLink Converter NL/ML. (See fig. 10).

As BeoMaster/BeoSound 5 (the A Master) is removed from the Master Link, then the BeoLink Converter NL/ML can take the A Master role to be able to distribute sound from BeoSound Moment (or Network Link in general) to the Master Link. In the BeoLink Converter NL/ML menu **Sources visible on ML**, only audio sources can be selected. (See fig. 11).

As BeoMaster/BeoSound 5 (the A Master) is removed from the Master Link, then the BeoLink Converter NL/ML can't distribute sound from any audio source from Master Link to Network Link. In the BeoLink Converter NL/ML menu **Experience mapped to NL**, no audio sources can be selected. (See fig. 12).

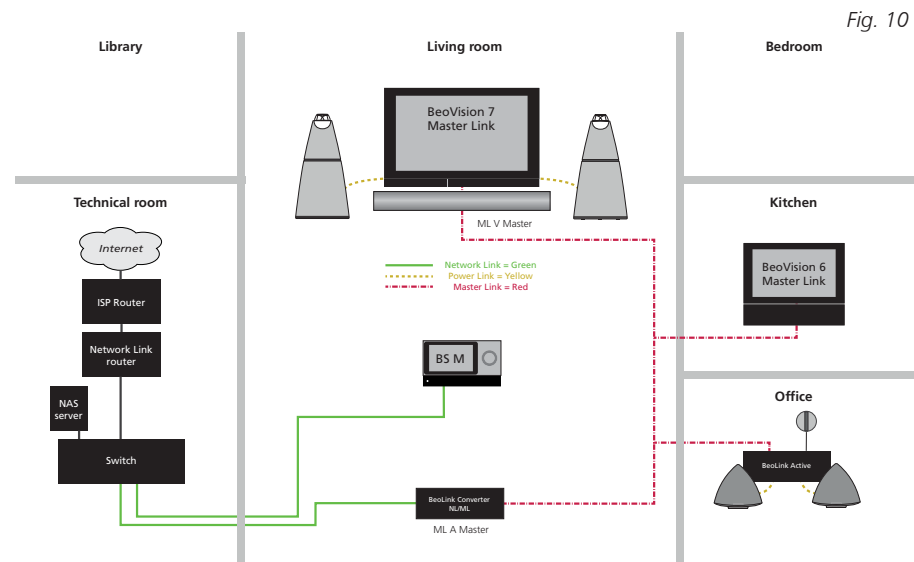


Fig. 10

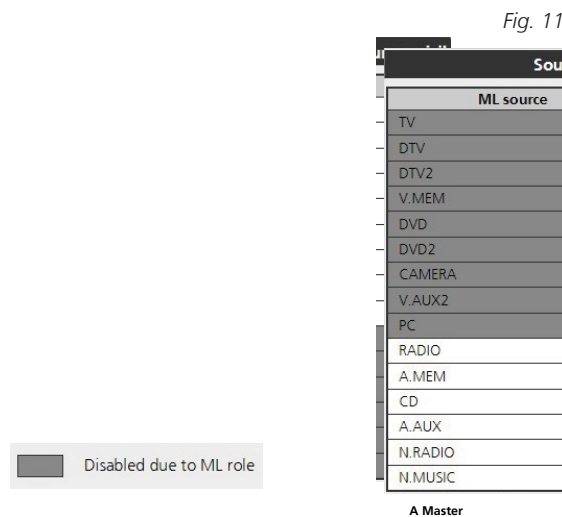


Fig. 11

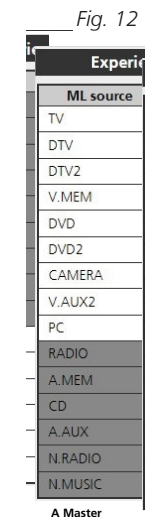


Fig. 12

Example: AV Master

If customers do not have any Audio Master in their setup, but wants to replace the BeoVision 7 with a BeoVision 11 on Network Link. Then BeoVision 11 should be connected to the Master Link system through a BeoLink Converter NL/ML. (See fig. 13).

As BeoVision 7 (the V Master) is removed from the Master Link, then the BeoLink Converter NL/ML can take the AV Master role to be able to distribute sound from audio and video sources on BeoVision 11 (or Network Link in general) to the Master Link. In the BeoLink Converter NL/ML menu **Sources visible on ML**, both video and audio sources can be selected. (See fig. 14).

As there is no Audio Master and as BeoVision 7 (the V Master) is removed from the Master Link, then the BeoLink Converter NL/ML can't distribute anything from Master Link to Network Link. In the BeoLink Converter NL/ML menu **Experience mapped to NL**, no sources can be selected at all. (See fig. 15).

! Be aware of that it is necessary to have a ML Power Master on Master Link, when the BeoLink Converter NL/ML has the ML role AV Master (Audio Video Master). In this setup the ML Power Master is the BeoVision 6.

Additional information about ML Power Master may be found on BeoWise. (BeoWise > Link > BeoLink > BeoLink Converter NL/ML > TIPS > Compatible Bang & Olufsen Master Link products).

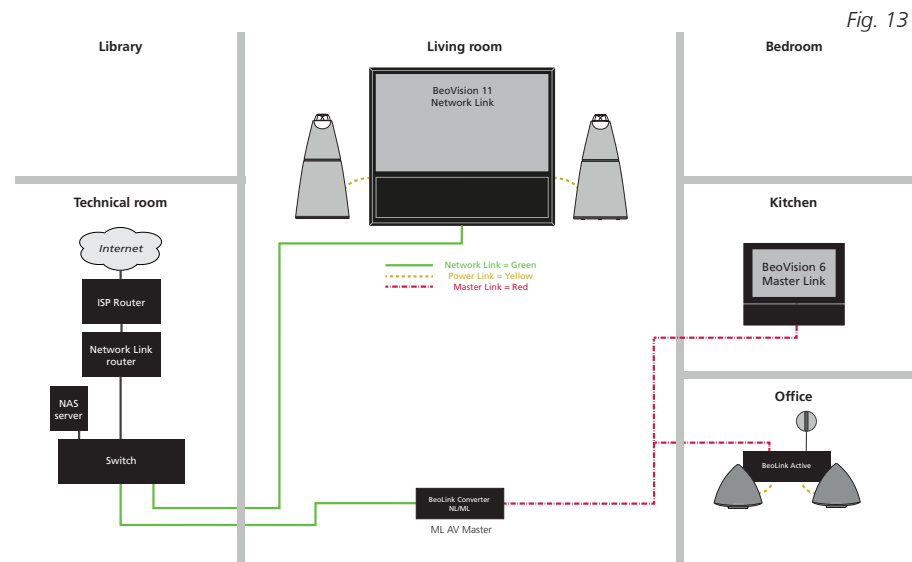


Fig. 13

Disabled due to ML role

Fig. 14

Sources visible on ML	
Source	ML source
TV	TV
DTV	DTV
DTV2	DTV2
V.MEM	V.MEM
DVD	DVD
DVD2	DVD2
CAMERA	CAMERA
V.AUX2	V.AUX2
PC	PC
RADIO	RADIO
A.MEM	A.MEM
CD	CD
A.AUX	A.AUX
N.RADIO	N.RADIO
N.MUSIC	N.MUSIC

AV Master

Fig. 15

Experience mapped to NL	
Source	ML source
TV	TV
DTV	DTV
DTV2	DTV2
V.MEM	V.MEM
DVD	DVD
DVD2	DVD2
CAMERA	CAMERA
V.AUX2	V.AUX2
PC	PC
RADIO	RADIO
A.MEM	A.MEM
CD	CD
A.AUX	A.AUX
N.RADIO	N.RADIO
N.MUSIC	N.MUSIC

AV Master

Example: Source Center

If customers have an Audio Master (i.e. BeoSound 4) which is able to use N.MUSIC and N.RADIO from a connected BeoMaster 5 set to AudioMaster = No (Source Center role), then BeoLink Converter NL/ML can replace this BeoMaster 5 and use N.MUSIC and N.RADIO to distribute two Network Link sources to Master Link. (See fig. 16).

As there is no BeoMaster 5 on the Master Link, then the BeoLink Converter NL/ML can take the Source Center role to be able to distribute N.MUSIC and N.RADIO from BeoPlay V1 (or Network Link in general) to the Master Link. In the BeoLink Converter NL/ML menu Sources visible on ML, only N.MUSIC and N.RADIO can be selected. (See fig. 17).

As N.MUSIC and N.RADIO is not distributed from the Master Link, then the BeoLink Converter NL/ML can't distribute sound from these sources from Master Link to Network Link. In the BeoLink Converter NL/ML menu Experience mapped to NL, N.MUSIC and N.RADIO can't be selected. (See fig. 18).

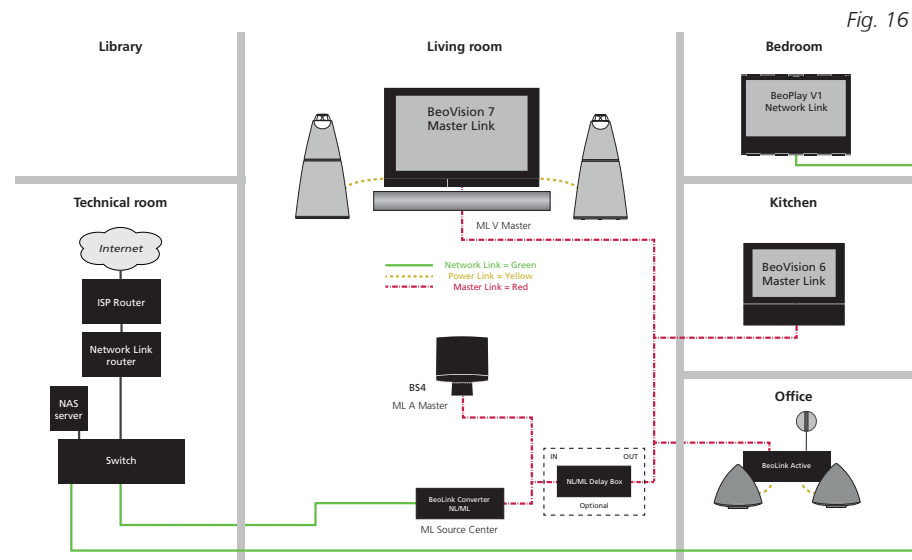


Fig. 16

! Be aware of that in some situations there will be echo. See the table below.

Sources	Network Link		Master Link	
	Audio N.RADIO, N.MUSIC	Video All video sources	Audio CD, Radio, A. Mem, etc.	Video All video sources
With Delay box	ECHO	NO ECHO	NO ECHO	ECHO
Without Delay box	NO ECHO	NO ECHO	ECHO	ECHO

■ Disabled due to ML role

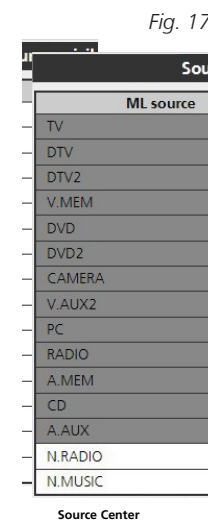


Fig. 17

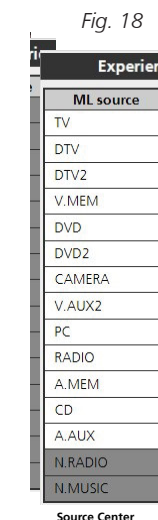


Fig. 18

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