BeoLink Converter NL/ML
Installation Guide

Ver. 1.2

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- Web Interface
  - ▶ Setup Menu
- Must be connected to a router to obtain an IP-address
- Wall bracket available

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BeoLink Converter NL/ML

The BeoLink Converter NL/ML is a converter between the Network Link and the Master Link system and makes it possible to add Network Link products to a Master Link setup. 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)
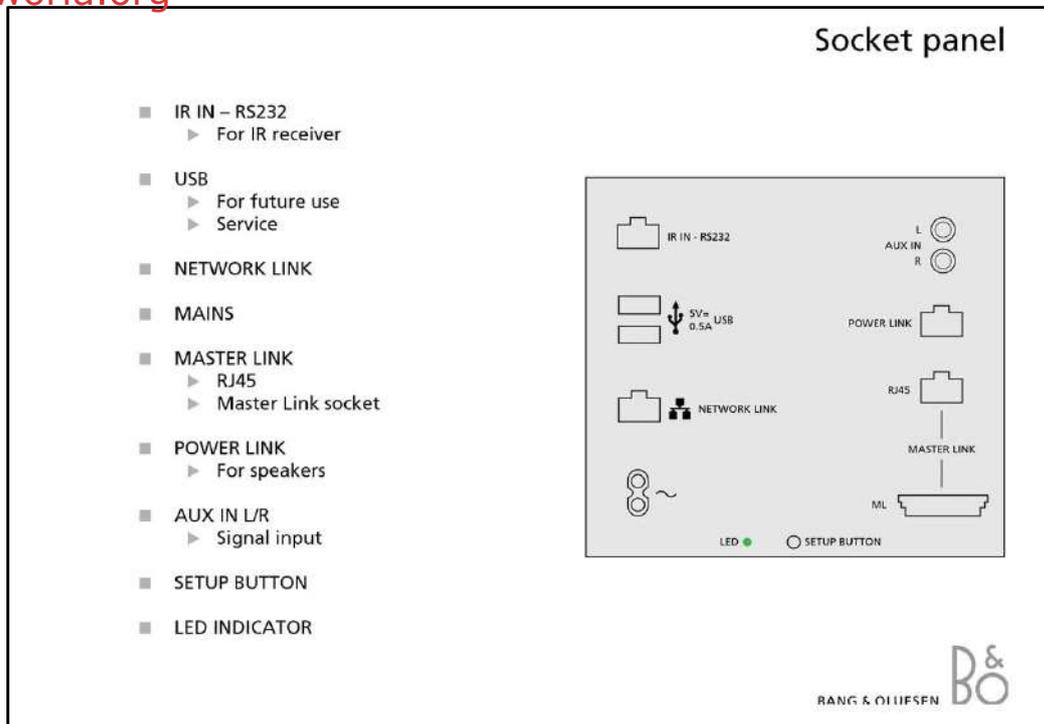
Socket panel

IR IN – RS232
The IR IN socket is used to connect a IR Receiver to the BeoLink Converter NL/ML.

USB
The USB sockets are for future use.

Network Link (Ethernet)
For the connection to the Network Link router.

Mains
For the connection to the mains.

Master Link
The Master Link socket and the RJ45 socket 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 Master Link socket are identical.
- **RJ 45 socket**
  The RJ45 socket is used if the Master Link cable is equipped with a RJ45 plug.
- **Master Link socket**
  The Master Link 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 socket is used to add a signal from another source.

Setup Button
The setup button can be used during normal operation by pressing and holding the button.

LED Indicator
The LED Indicator gives feedback about the status of the system and about functions chosen with the setup button.

LED System Status

- LED System status
  - Booting/System Booting
    ML start up, Network start up,
    Product configuration
  - Critical error
  - Normal operation/streaming
  - Normal operation/no streaming

LED indicator		Description
Solid red	🔴	Flash update of peripherals (don't turn off power)
Flashing orange	🟠	Critical error
Solid green	🟢	Normal operation/streaming
Flashing green	🟢	Booting/System Boot, ML start up, Network start up, Product configuration
Off		Normal operation/no streaming

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LED System Status

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.

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Setup button functions & LED feedback

No./Function	Confirm	Description
0 - Initial escape	No	Do nothing (before status LED flashes first time)
1 - Initial escape	No	Do nothing (when status LED has flashed once)
2 - Audio Master		For future use
3 - Video Master		Factory default setting. ML VM in option 2
4 - AV Master		For future use
5 - Factory default	Within 3 sec.	Delete configuration - factory default installed
6 - Power up Web	Within 3 sec.	Power up Web server (main processor power up)
7 - Reset password	Within 3 sec.	'Admin' and 'User' password to factory default
8 - Fixed address	Within 3 sec.	Enables the default fixed IP address
9 - Dynamic address	Within 3 sec.	Enables DHCP - dynamic IP address
10 - ML Power save	Within 3 sec.	Not implemented
11 - Escape	No	Do nothing (Status LED red)

LED indicator	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 4 flashes/sec	Confirmation pattern. Flashes <N> times corresponding with function no. just performed. 1 second Off and then solid green

Setup button functions & 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 indicated 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.

Example 1 (Network Link setup without Master Link)
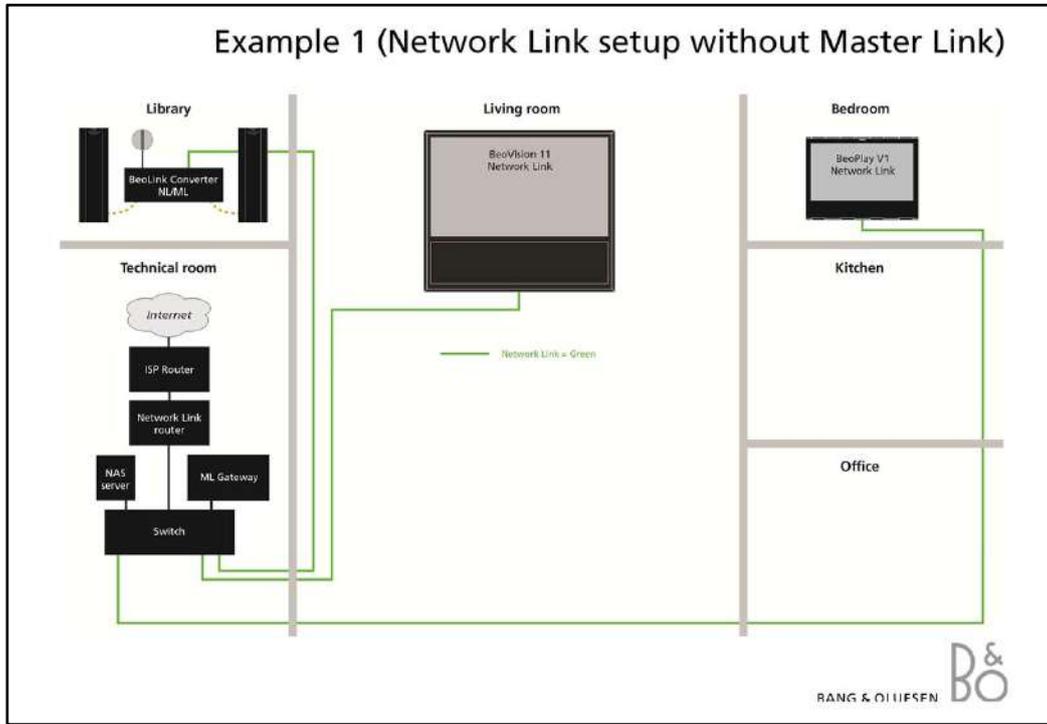
Network Link setup without Master Link

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)

Share speaker table

	Share speakers on TVs		Comments
	Living room	Other rooms	
Example 1	YES	NO	As there is no Master Link connected then share speaker value doesn't matter.

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 1	BLC Library	BV11	BLC Library	To Power Link: ➢ Video sources from living room ➢ Sources names that are not present on living room from bedroom ➢ AUX (line in) from local product To Network Link: ➢ AUX (line in) from local product To Master Link: ➢ None

Note!

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

Example 2 (Network Link and Master Link setup)
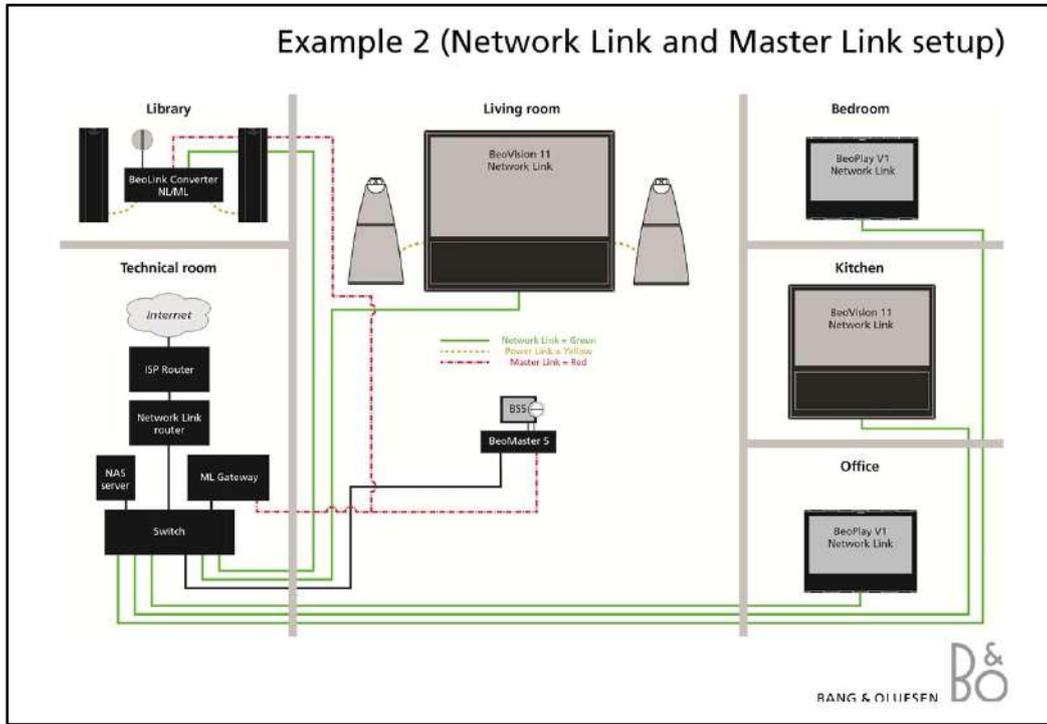
Network Link and Master Link setup

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.

Share speaker table

	Share speakers on TVs		Comments
	Living room	Other rooms	
Example 2	YES	NO	

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 2	BLC Library	BV11	BLC Library	**To Power Link:** ➢ Video sources from living room (BV11) ➢ Audio sources from living room (BS5), except AUX ➢ Source names that are not present on living room from bedroom ➢ AUX (line in) from local product **To Network Link:** ➢ Audio sources from living room (BS5), except AUX ➢ AUX (line in) from local product **To Master Link:** ➢ Video sources from living room (BV11) ➢ Source names that are not present on living room from other rooms, as long as they can be mapped to free Master Link sources/commands

Example 3 (Network Link and Master Link setup)

Network Link and Master Link setup

Synchronized sound distribution between all link rooms.

Share speaker table

	Share speakers on TVs		Comments
	Living room	Other rooms	
Example 3	YES	NO	

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 (BS5), except AUX ➢ AUX (line in) from local product To Master Link: ➢ Video sources from living room (BV11) ➢ Source names that are not present on living room from other rooms, as long as they can be mapped to free Master Link sources/commands

Note!

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

Example 4 (Network Link and Master Link setup)
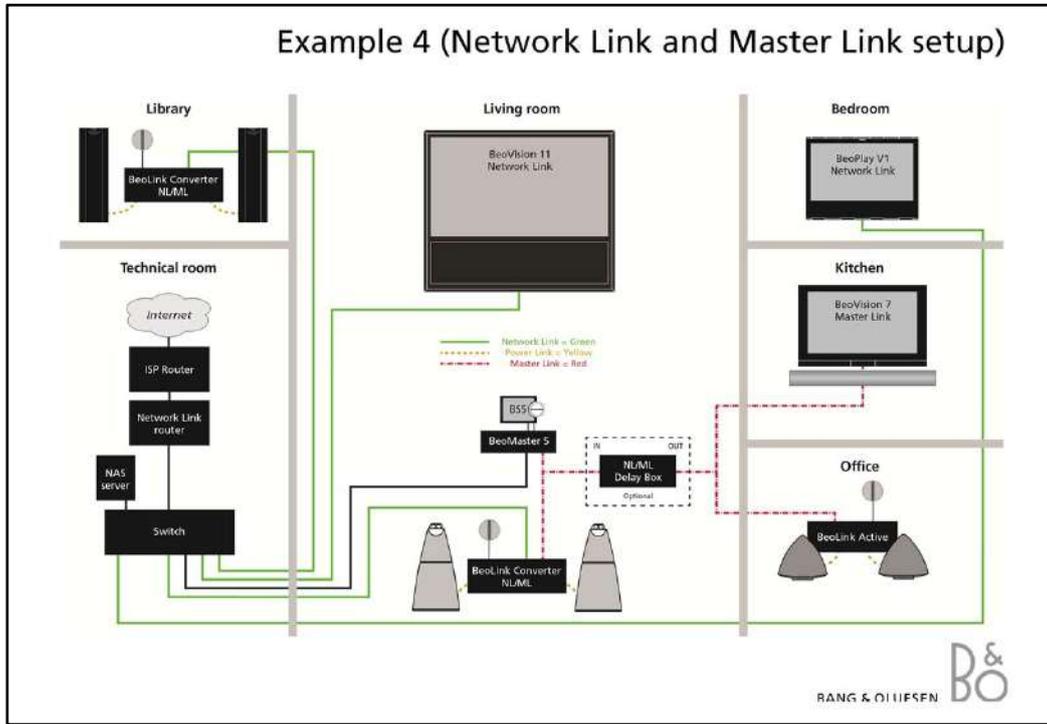
Network Link and Master Link setup

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.

Share speaker table

	Share speakers on TVs		Comments
	Living room	Other rooms	
Example 4	NO	NO	BeoLink Converter NL/ML share speakers with Master Link Audio Master

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 4	BLC Living room	BLC Living room	BV11	To Power Link: ➢ Video sources from living room (BV11) ➢ Audio sources from living room (BS5), except AUX ➢ Source names that are not present on living room (BV11 + BS5) from bedroom ➢ AUX (line in) from local product To Network Link: ➢ Audio sources from living room (BS5), except AUX ➢ AUX (line in) from local product To Master Link: ➢ Video sources from living room (BV11) ➢ Source names that are not present on living room from other rooms, as long as they can be mapped to free Master Link sources/commands Note: ➢ Source select from BS5 menu cause BS5 source to start playing in BLC living room

The table above continues on next page.

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 4	BLC Library	BV11	BLC Living room	**To Power Link:** ➢ Video sources from living room (BV11) ➢ Audio sources from living room (BS5), except AUX ➢ Source names that are not present on living room (BV11 + BS5) from bedroom ➢ AUX (line in) from local product **To Network Link:** ➢ AUX (line in) from local product **To Master Link:** ➢ None

Note!

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

Example 5 (Network Link and Master Link setup)
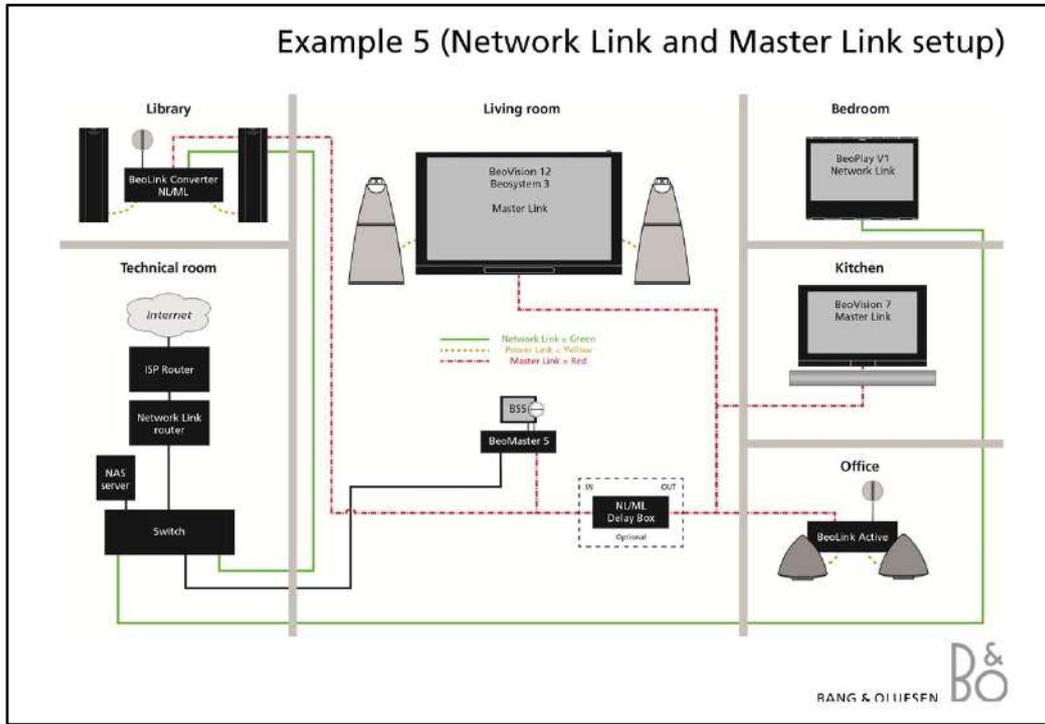
Network Link and Master Link setup

With Master Link product in the main room you get synchronized sound from audio sources in all link rooms. Your 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.

Share speaker table

	Share speakers on TVs		Comments
	Living room	Other rooms	
Example 5	N/A	NO	Living room Master Link TV (BV12) share speakers with Audio Master

BeoLink Converter NL/ML connect to table

	BLC	Primary	Secondary	Comments
Example 5	BLC Library	BLC Living room	BeoPlay V1	To Power Link: ➢ Video sources from living room (BV12) ➢ Audio sources from living room (BS5), except AUX ➢ Source names that are not present on living room from bedroom ➢ AUX (line in) from local product To Network Link: ➢ Video sources from living room (BV12) ➢ Audio sources from living room (BS5), except AUX ➢ AUX (line in) from local product To Master Link: ➢ None

Note!

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

- Disconnect all products in the system from the mains
- Connect the cables
  ► Master Link Cable from the the BeoLink Converter NL/ML and Audio Master to the input socket on the NL/ML Delay Box.
  ► 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 the products to the mains
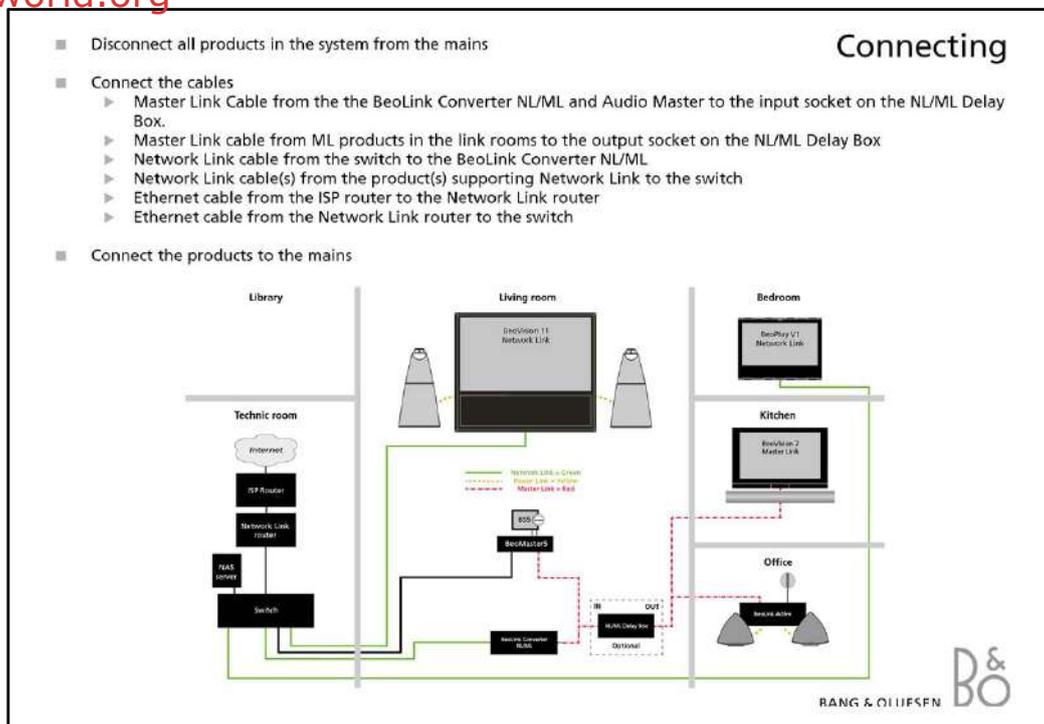
Connecting

Connecting

Connecting the BeoLink Converter NL/ML
- 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 plug 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 TV
BeoLink Converter NL/ML must be activated in the 'Product Integration' menu in the TV.

Access the following menu: 'Setup Menu' > 'Product Integration' > 'B&O Connect'
`Connect to´ select BeoLink Converter NL/ML.
`Share speakers´ select YES to share the TV speakers with the Audio Master.
`VM option´ select option 2.

Note!
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.
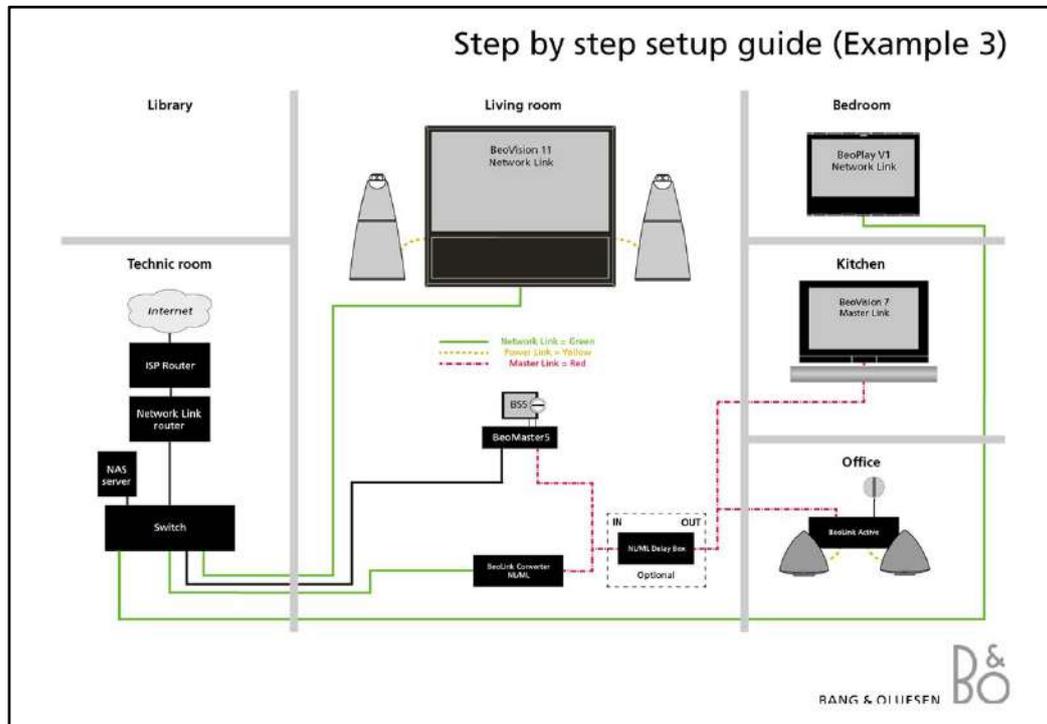
Step by step setup guide.

This is a step by step setup guide to Example 3 (page 7), 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.

Note!
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 Connect to (primary) and Connect to (secondary) It can save a lot of manual work.

1. Setup 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 Convereter NL/ML can be found in same way as on an iPhone/iPad (see page 18).
- 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 Configurations menu and select **'settings'**
- **ML Role:** Select V Master and press the save button. (The BeoLink Converter NL/ML have this role seen from the Master Link side)
- **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:** Check that the name is BeoLink Converter NL/ML otherwise write BeoLink Converter NL/ML and press the save button. (Select a name to the BeoLink Converter NL/ML)

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Go to **'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 **'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 the CD and RADIO (Possible to enable/disable a source)
- Press the save button to store the settings.

2. Setup the Living room TV (BeoVision 11)

Start the TV and go to the 'B&O CONNECT' menu on the TV.
('SETUP' > 'PRODUCT INTERGRATION' > 'B&O CONNECT')
- **Connect to:** Select BeoLink Converter NL/ML (Select the product to be distributed from)
- **Share speakers:** Select YES (Select YES to share the TV speakers with the Audio Master)
- **VM option:** Select 2
- Press 'GO' to save the settings.
- Check now the source list in the menu, it has been updated with N.MUSIC, N.RADIO and A.MEM.

3. Setup the Bedroom TV (BeoPlay V1)

Start the TV and go to the 'B&O CONNECT' menu on the TV.
('SETUP' > 'PRODUCT INTERGRATION' > 'B&O CONNECT')
- **Connect to:** Select BeoLink Converter NL/ML (Select the product to be distributed from)
- **Share speakers:** Select NO
- **VM option:** Select 2
- Press 'GO' to save the settings.
- Check now the source list in the menu, it has been updated with N.MUSIC, N.RADIO and A.MEM.

In the living room it is possible listen to sources from BeoSound 5 and BeoVision 11.
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. (But this can be changed to BeoVision 11 by changing the settings in the 'B&O Connect' menu on the TV)

4. Setup the kitchen TV (BeoVision 7) and the office product (BeoLink Active)

Select option 6 in BeoVision 7 and option 6 BeoLink Active.

Note!
The NL/ML Delay Box is optional. Mount a NL/ML Delay Box for echo free audio source distribution.
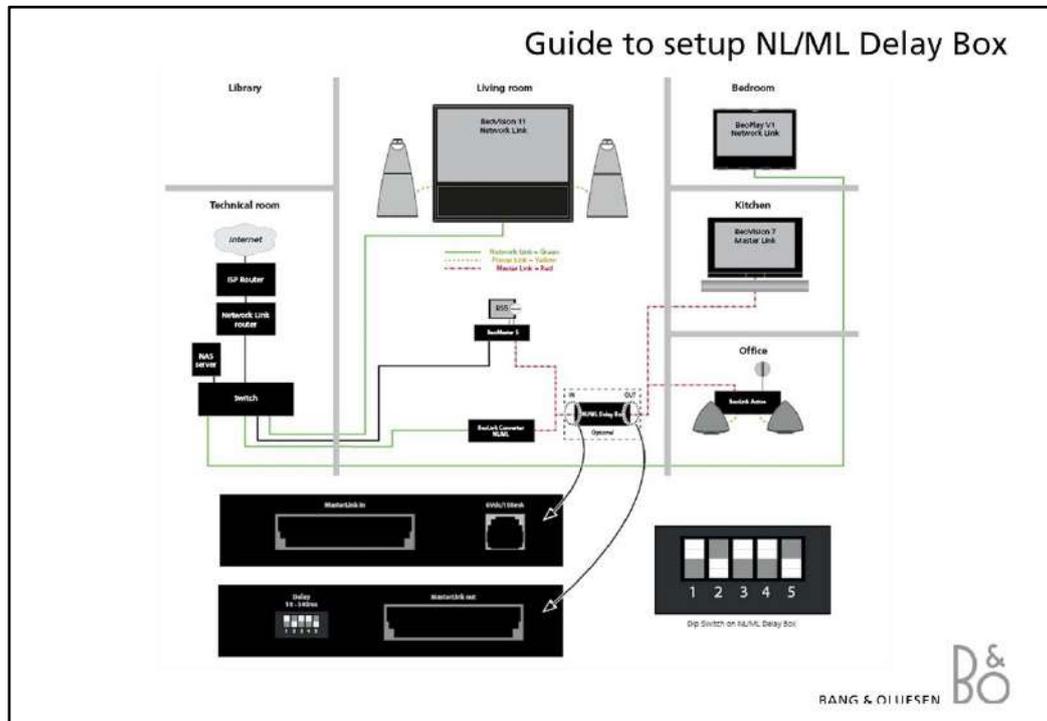
NL/ML Delay Box
To prevent echo in a Network Link/Master Link setup, with a Master Link Audio Master in the living room (main room) and other Master Link products, it is possible to mount a NL/ML Delay Box. The sound can be synchronized by connecting an NL/ML Delay Box between the Audio Master and the 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.
- Make the setting on the "delay box" based on the 'ML delay setting' value, relative to the Delay overview. The 'ML delay setting' value is specified in the following menu: 'CONFIGURATION' > 'NL MANAGEMENT' > 'NL DELAY' > 'ML DELAY SETTING.
 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 menu: '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 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.

Example:
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

Note!
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 a NL/ML Delay Box, please remember to order a SMPS adaptor.
NL/ML Delay Box: 8052438.
EU SMPS: 8040002   GB SMPS: 8040004   AUS SMPS: 8040006   US SMPS: 8040008

Delay overview:
If other delay values are required according to the ML DELAY SETTING displayed in NL products, then actual dip switch setting can be found from this table.

Audio delay ms	Comment	LSB				MSB
	Down = 0 / UP = 1	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5
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

- ■ Setup the Network Link router
  - ▶ Check the Internet access
  - ▶ Set up a Bang & Olufsen sub-network

- ■ Setup the BeoLink Converter NL/ML
  - ▶ Access the BeoLink Converter NL/ML via the Web Interface

- ■ Enter the Configuration Menu
  - ▶ 'Settings'
  - ▶ 'Sources visible on ML'
  - ▶ 'Experience mapped to NL'
    - ▶ Check the settings
    - ▶ Change settings if necessary
    - ▶ Save the settings

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Setting-up

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
  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.

Set up the BeoLink Converter NL/ML

- Access the BeoLink Converter NL/ML via the Web Interface (page 18).

- Enter the 'Configuration Menu' - 'Settings' (page 21).
  If more than one Network Link supported product are connected to the Network Link router select one to communicate with the BeoLink Converter NL/ML.

- Enter the 'Configuration Menu' - **'**'Sources visible on ML' (page 23).
  - Check the settings.
  - Save new settings.
- Enter 'Experience mapped to NL' (page 24).
  - Check the settings.
  - Save new settings.
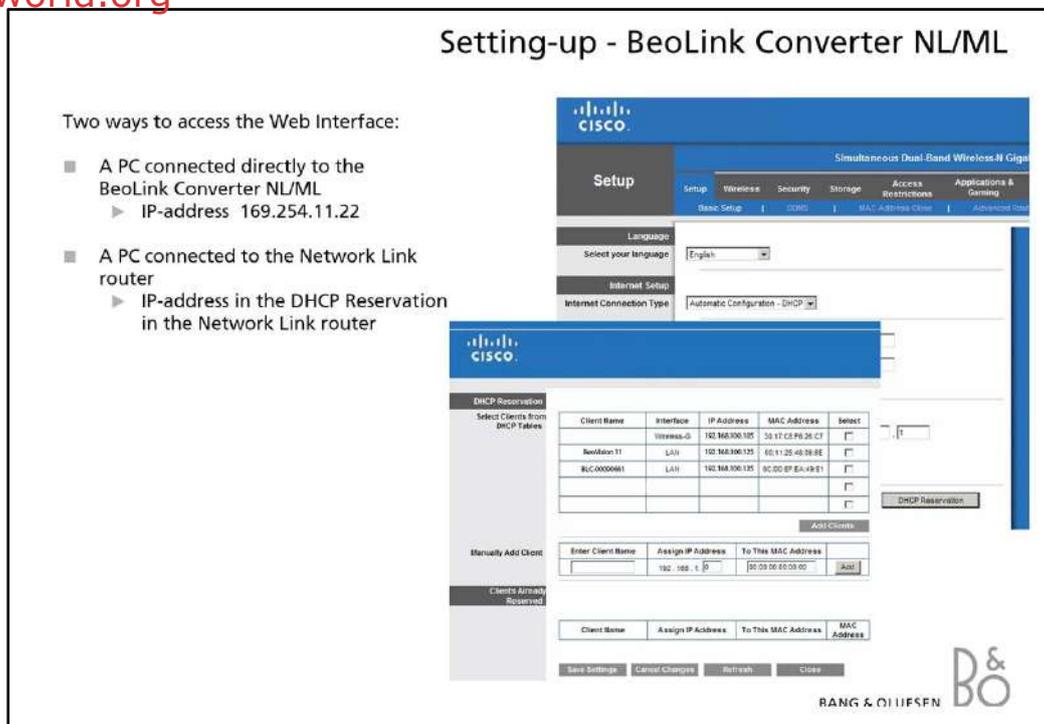
Setting-up - BeoLink Converter NL/ML

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

Setup the BeoLink Converter NL/ML
- The Web Interface in the BeoLink Converter NL/ML can be accessed in three ways:

Direct connection:
Connect a computer directly to the BeoLink Converter NL/ML via the Internet Browser - IP-address: 169.254.11.22.
- Disconnect the mains, reconnect the mains and wait until the LED indicator behind the
  socket panel cover stops flashing green.
- Enter the IP-address in the Internet browser.
- The default user name: 'admin'.
- The default password: 'admin'.
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 the BeoLink Convereter NL/ML can be found in same way
  as on an iPhone/iPad (see below).

- The setup app for smartphones/tablets can also be used.

Connection via an iPad/iPhone:
An iPad/iPhone can be used to access the Web Interface in the BeoLink NL/ML Converter.
- Open the Internet Browser on the iPad/iPhone ('Safari').
- Enter 'BLC-' followed by the BeoLink Converter NL/ML serial number: [BLC-XXXXXXXX.local].

Setting-up - Access Menu
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 Menu - *Software Update*
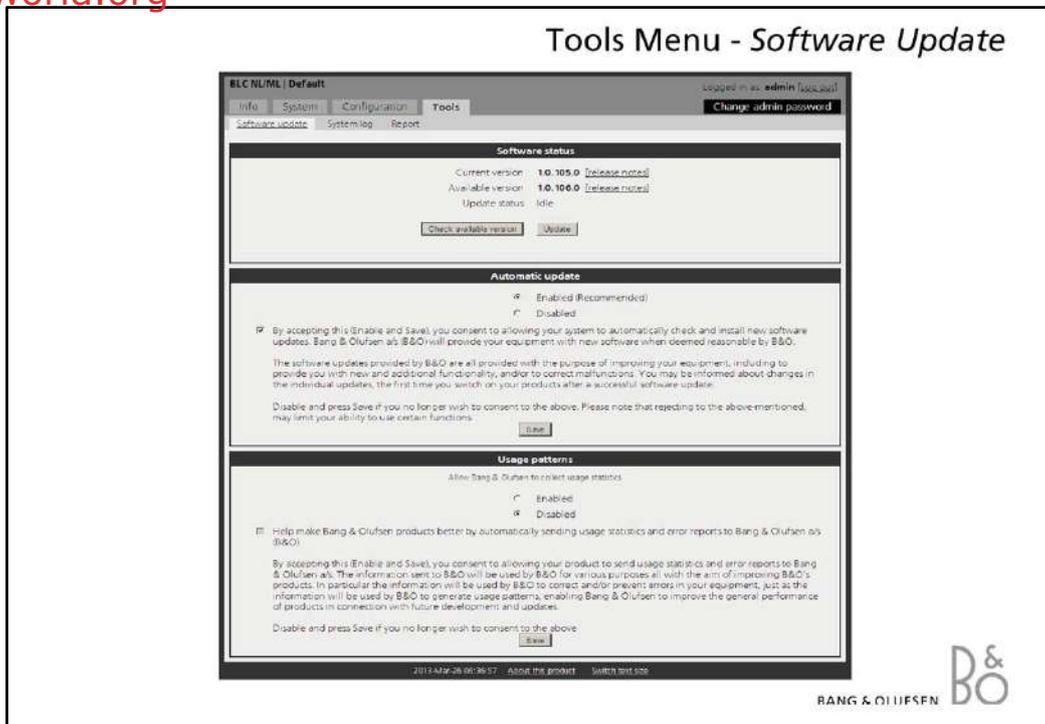
Tools Menu - *Software Update*
To update the software on-line in the BeoLink Converter NL/ML, it must be connected to the Internet via a router.

- 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 .

Note!
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.

Configuration Menu - *Settings*
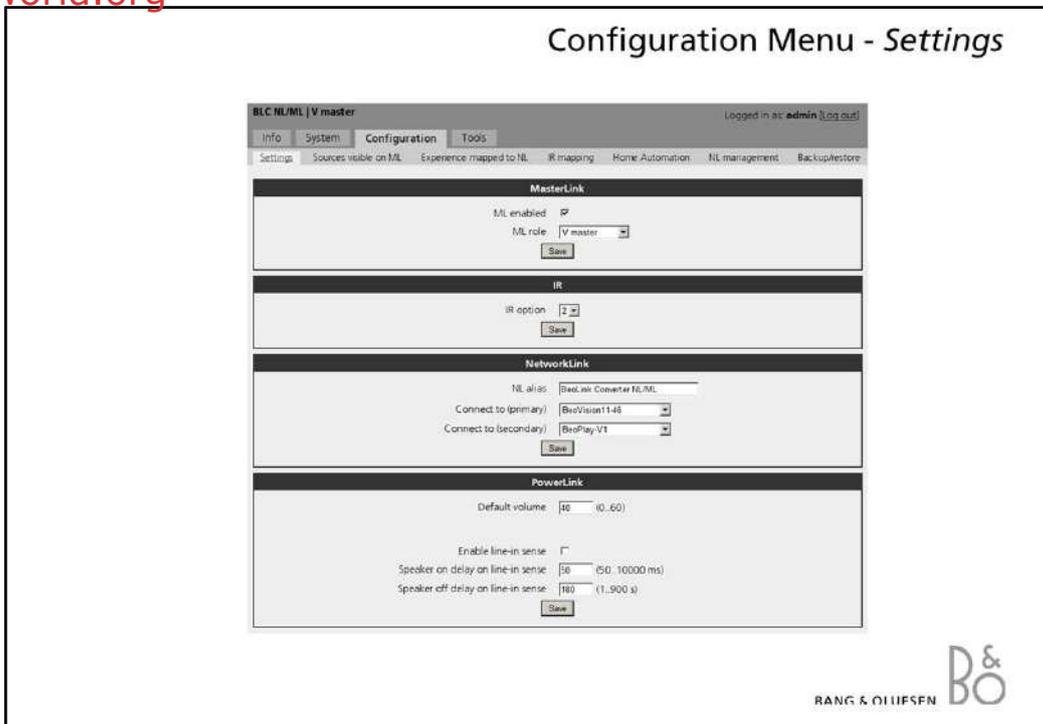
Configuration Menu - *Settings*

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 Connect to (primary) and Connect to (secondary) It can save a lot of manual work.

- Master Link   **[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.
  - 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.

- 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 option 1, 2 and 4.

- NetworkLink
  - 'NL alias' is an alias which is required for the product connected via the Network Link
    for instance a BeoVison 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.
  - 'Connect to (primary)' and 'Connect to (secondary)' All products connected to the
    Network Link can be selected. The table "Sources visible on ML" will first be filled with
    sources from the product selected in 'Connect to (primary)' and then unused source
    names will be added from the product selected in 'Connect to (secondary)'
    If more than one Network Link supported product is connected to the Network Link
    router 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.
  - The products are detected automatically.

- Power Link
  - 'Default volume' can be changed in a range between 0-60.
  - 'Line-in sense'   [Enable/Disable]
    The line-in sense can be disabled or enabled. If it is enabled then on detection of SENSE
    ON Line In source is selected to Power Link after 'Speaker on delay' timeout and on

detection of SENSE OFF speakers are turned off after 'Speaker off delay' (in case Line In source is still playing to Power Link).
NOTE: It is suggested to disable Line In sense when BLC is only converter (No speakers connected) to avoid interruption of playback to ML on sense detection.
- '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.

Note!
Remember to save the settings.

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.

Configuration Menu - *Sources visible on ML*
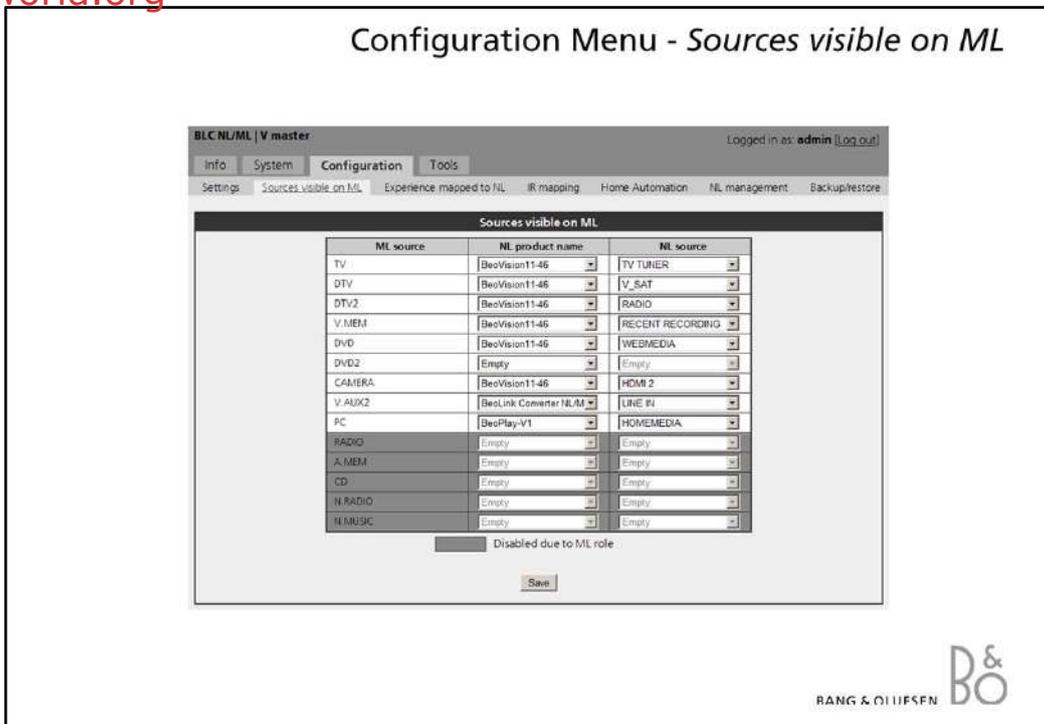
Configuration Menu - *Sources visible on ML*
Products connected to the Network Link are detected automatically.

- ML Source
  - Sources from Network Link available on the Master Link.
    Source mapping of Beo4 buttons to sources on the Network Link.

- NL Product Name
  - Products connected to the Network Link.
    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 ML source if required. This can be done in the drop down box.

Note!
Remember to save the settings.

Configuration Menu - *Experience mapped to NL*
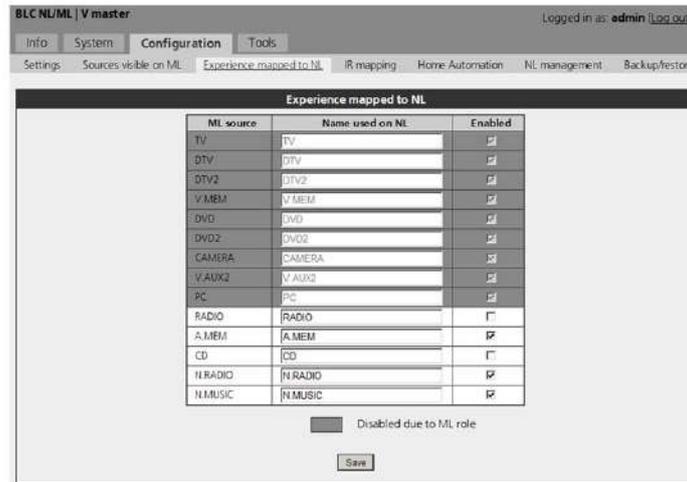
Configuration Menu - *Experience mapped to NL* **('Sources visible on NL')**

- ML Source
  - Shows the available sources on the Master Link system.

- Name used on NL
  - Shows the source names used on the Network Link side. Will be shown on the TV screen
    when a button is pressed, for instance CD.
  - Possible to enter any name - 'Music', 'Favourites', etc.

- Enabled
  - Possible to enable/disable a source.

Note!
Remember to save the settings.
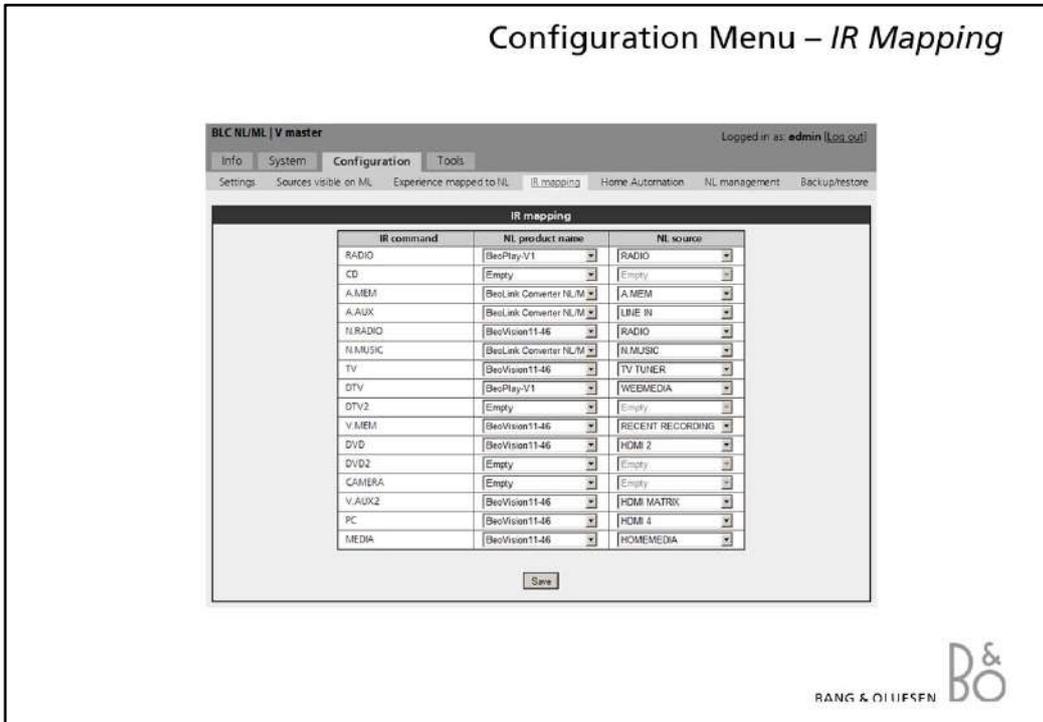
Configuration Menu – *IR mapping*

- 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.

Note!
Remember to save the settings.

IR mapping settings are only relevant if Power Link speakers and IR reciever are installed as in example 1, 2, 4 and 5.
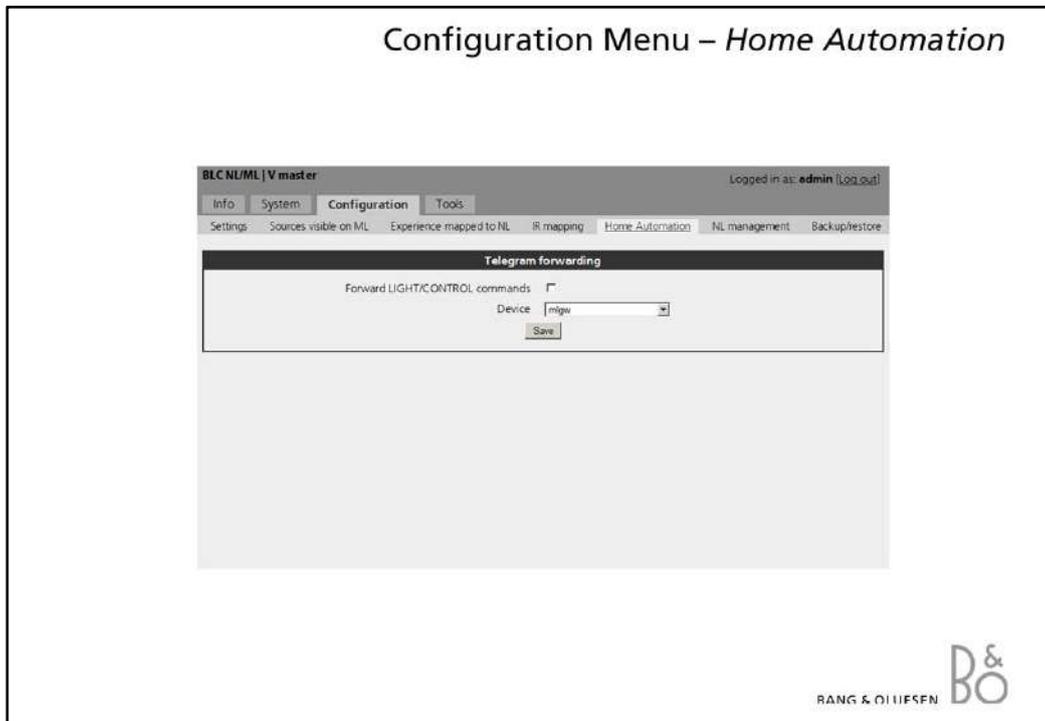
Configuration Menu – *Home Automation*

- 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 NL.

Note!
Remember to save the settings.

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

Configuration Menu – *NL Management*
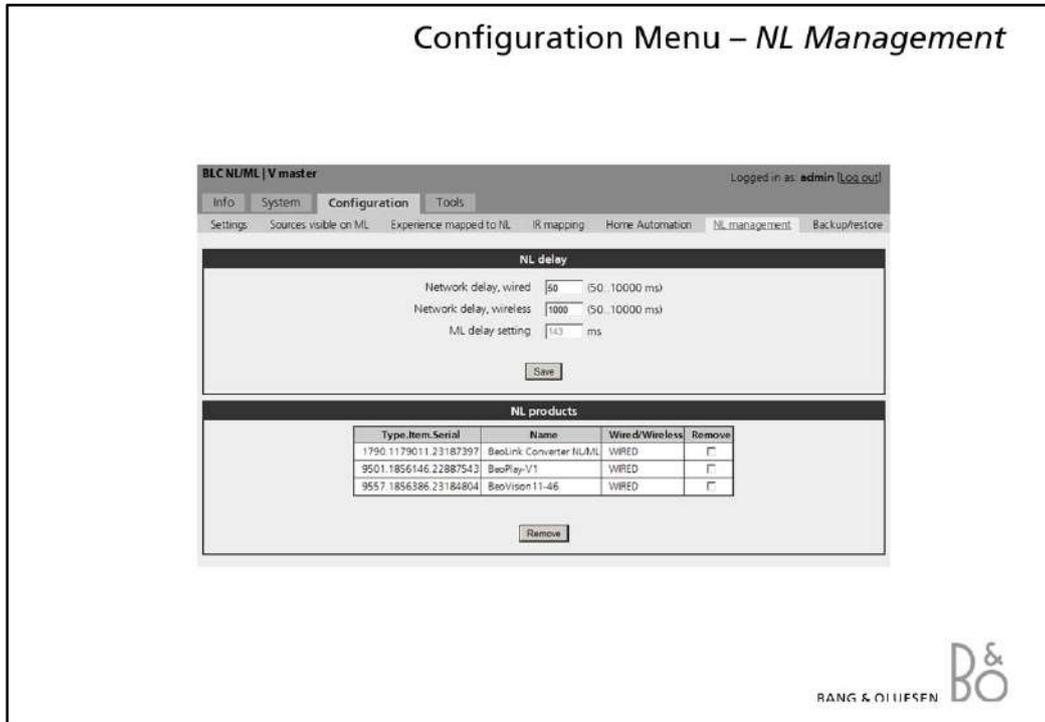
Configuration Menu – *NL management*

- NL delay
  - 'Network delay, wired' - Streaming delay that is caused by wired network. Used only if all NL products are connected with wired connection.
  - 'Network delay, wireless' - Streaming delay that is caused by wireless network. Used when at least one of the products in network is connected via wireless connection. Warning: If using wireless together with the NL/ML delay Box, then echo will not be eliminated.
  - 'ML delay setting' – Total streaming delay that is used for streaming (max product delay + network related delay). ML Delay box delay has to be set close to this value.

- NL products
  - This chapter shows all known products in the network and allows removing products that are not present in the network any more. On pressing "Remove" all products that have check behind them are removed.
    If product is accidentally removed then that product has to be rebooted to get back to list. Operating products that are not on list might not work properly.
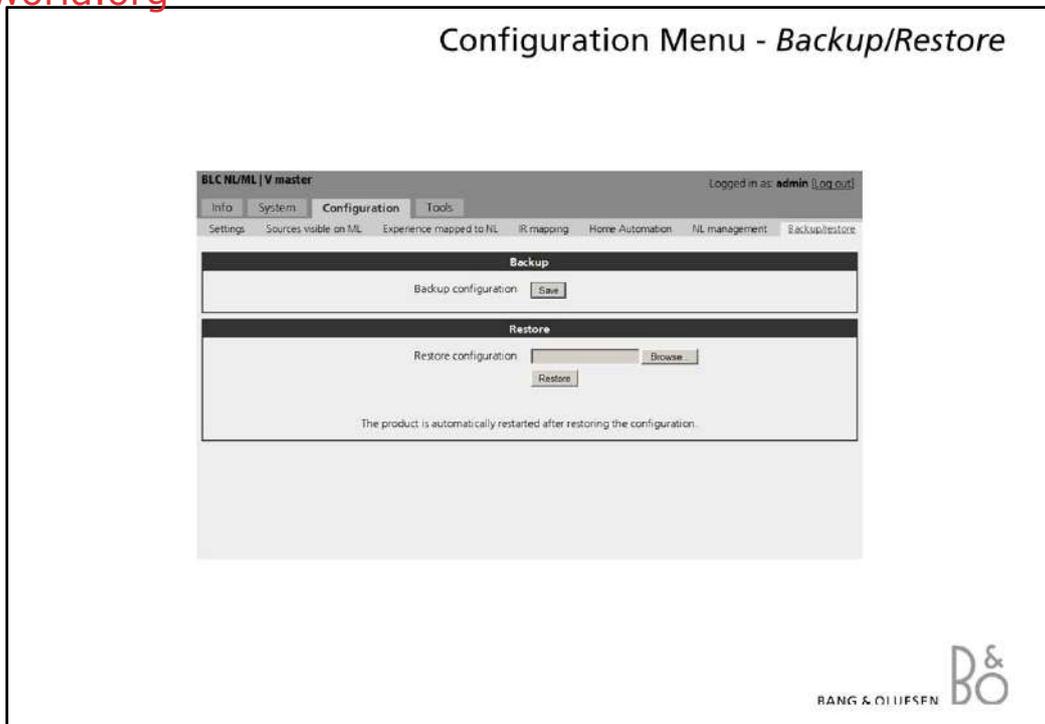
Configuration Menu - *Backup/Restore*

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

- Restore   [Browse/Restore]
The restore function can be used to restore a back-up file to the BeoLink Converter NL/ML.

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Info Menu - *Product Info*

Info Menu - *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 E

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

Info Menu - *Project Info*

BLC NL/ML | Default   Logged in as: **admin** [Log out] [Help]

| Info | System | Configuration | Tools | Change admin password |

Product info   Project info   SW versions   Service counters

Project info

Project name   [Default]
Customer   [ ]
Installer   [ ]
Installer contact info   [ ]

[Save information]

2010-Oct-10 10:33:46   About this product   Switch text size

BANG & OLUFSEN B&O
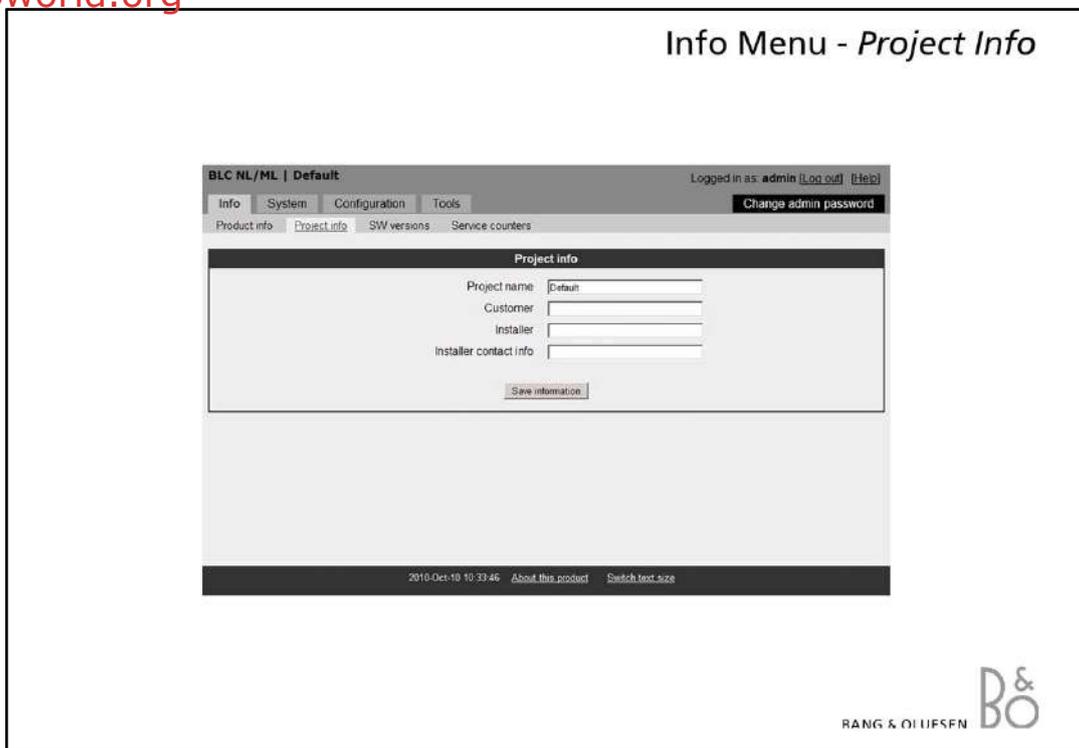
Info Menu - *Project Info*

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.

Info Menu - *SW Versions*
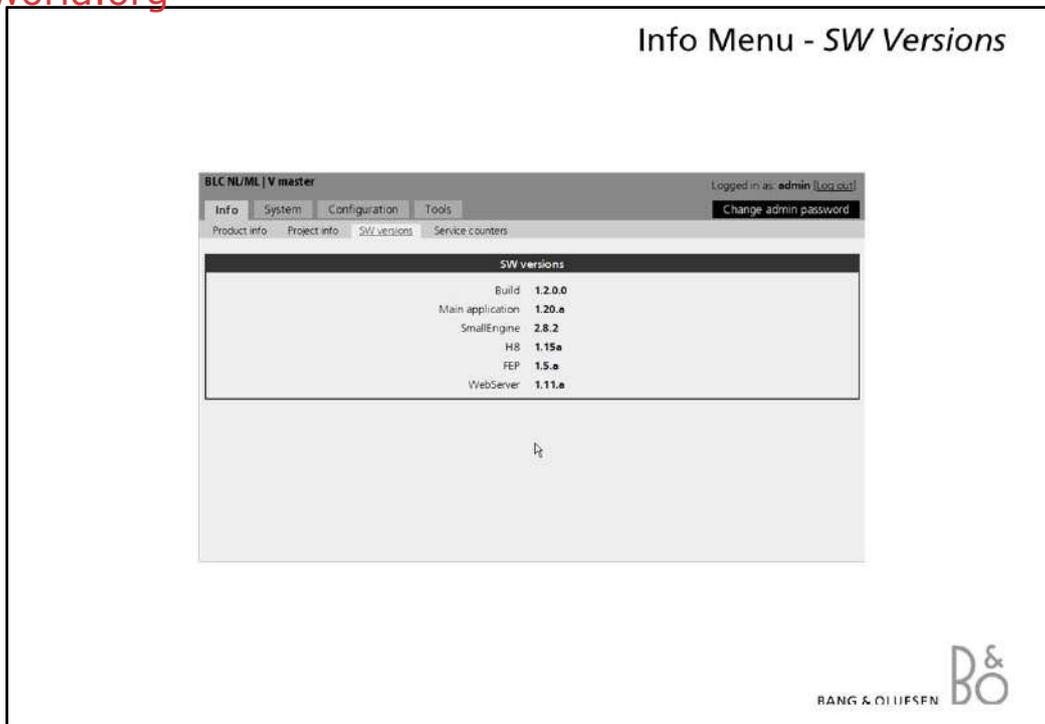
Info Menu - *SW Versions*

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.
- WebServer
  - Software version of the software for the WebServer.

Info Menu - *Service Counters*
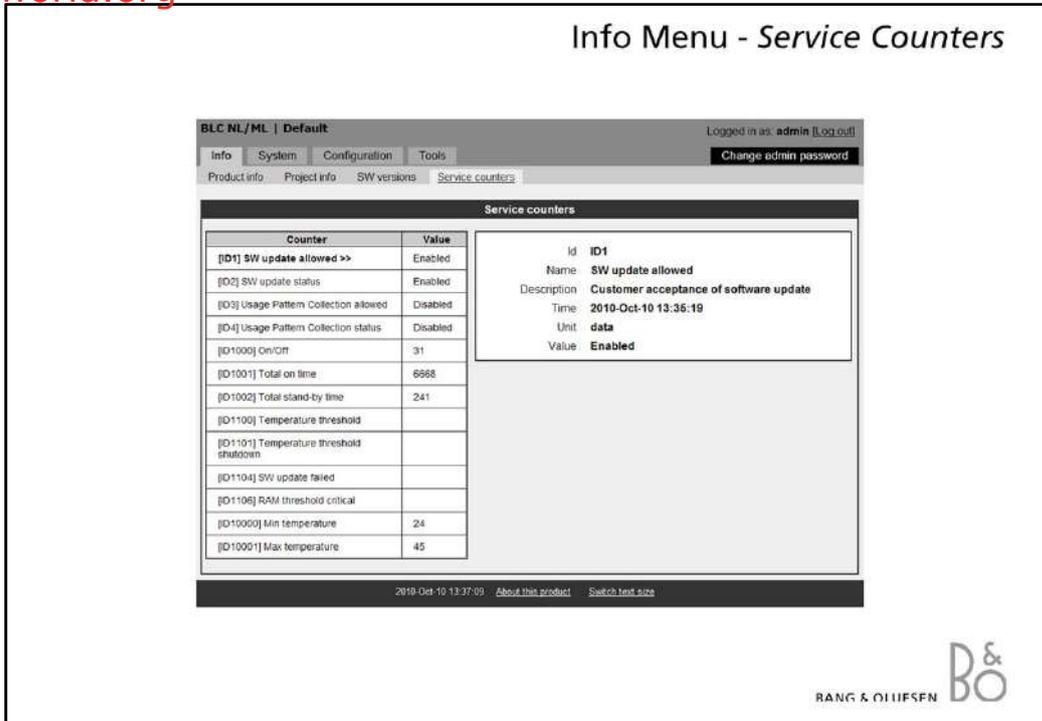
Info Menu - *Service Counters*

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.
  - 'Minimum temperature' and 'Maximum temperature' inside the product, etc.

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

System Menu - *Network*
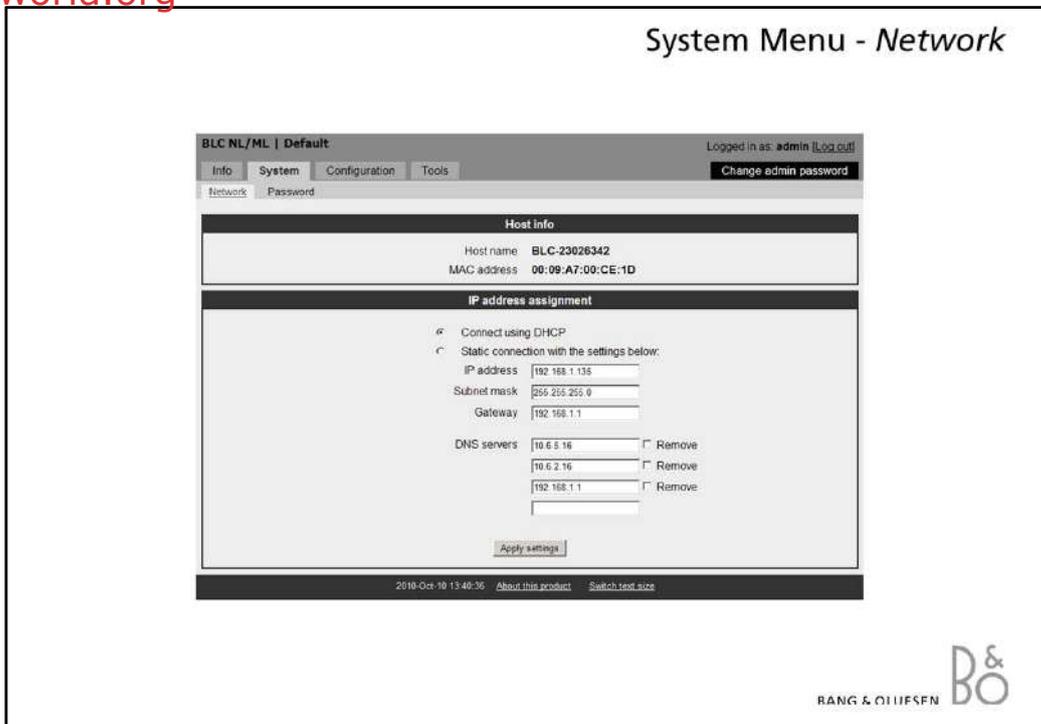
System Menu - *Network*

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 IP address and subnet mask must match the actual subnet range.

Note!

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.

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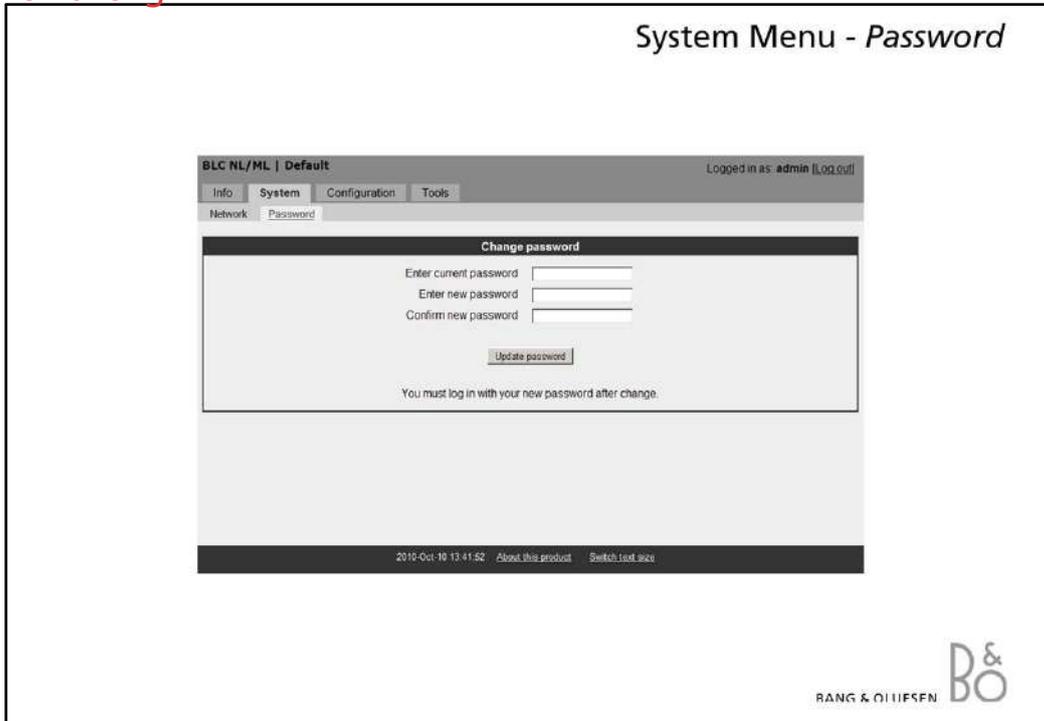
System Menu - *Password*

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 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. (page 2)

Tools Menu - *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.

Note!
System log is cleared after reboot. Remember to save the log before rebooting in case of a problem.
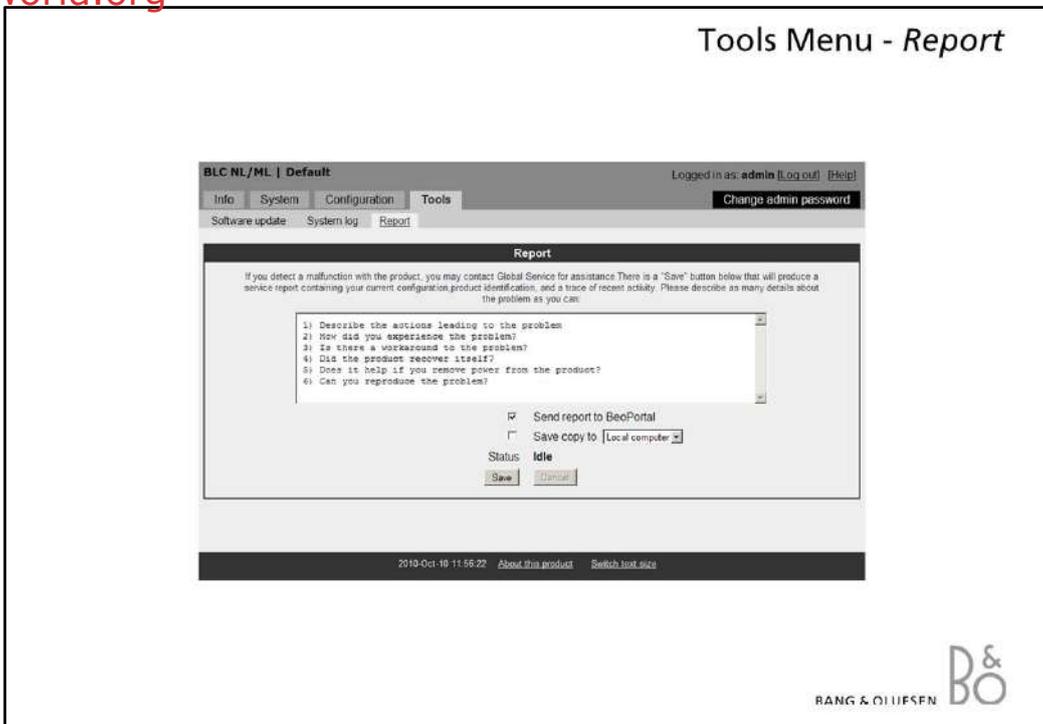
Tools Menu - *Report*

Tools Menu - *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 activated 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 send 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.
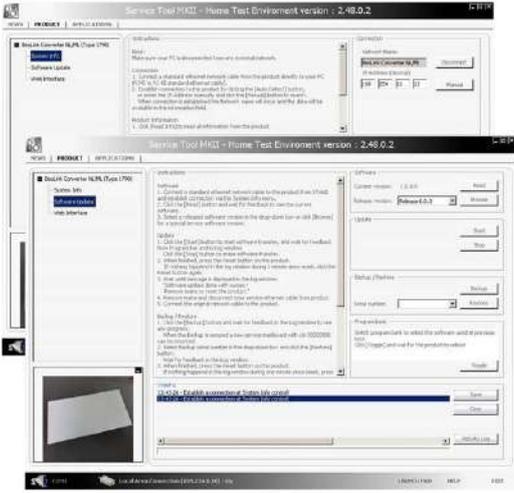
The ServiceTool contains the following functions:
- Read out of product information
- Read out of network status
- Log files detection
- Software update
- Backup/restore of the configurations
- Access to the Web menu