BeoLink Gateway

Installation Guide English - version 1.1



https:/	//beoworld.ora
inceput/	, 500

Introduction	The Beol ink Gateway is developed with the purpose to integrate Bang & Olufsen Beol ink systems (audio and video products) with one or more
	home automation systems.
	The BeoLink Gateway is the successor of the Master Link Gateway.
	The BeoLink Gateway is an interface between the Bang & Olufsen BeoLink system on one side and one or more dedicated Home Automation systems on the other side. The Bang & Olufsen BeoLink systems comprises audio and video products regardless of being part of a Network Link system or a Master link system. The Home Automation systems connects regardless of using Ethernet connection or RS232 protocol connection and almost all home automation systems are automatically supported or can be programmed into the solution.
	The BeoLink Gateway provides support in two ways:
	 Hassle free installation of Bang & Olufsen A/V systems with other control systems and with no use of extra boxes. This is due to the fact that BeoLink Gateway gets use of an open Ethernet based protocol.
	- Control of the entire home takes in principle place via one remote unit either a Bang & Olufsen remote control, a BeoRemote App or the overlay menus on the TV. Furthermore the installation can be connected to via the Web-interface from anywhere in the Internet.
	The concept also supports in easy setup, integration and even easy event programming which means seamless integration of the systems. As such the daily handling takes place using just one touch on the remote to match the moods matching the daily activities.
Designing the Home Au	tomation lavout
	The layout of the home installation can be setup and rearranged as desired. By the layout elements, area, zone, systems, resources and macros the entire Home Automation and AV installation can be organized to make operation simple and logic.
	Scenes can be set and operated by a single touch. See further description of the concept page 4, and definition of the above mentioned elements page 5.
Help	
	During setup of the home automation system, note that the Help function in the menu line gives content-based in depth help in terms of definition, examples and lists of choices.
TIPS	
	Go to BeoWise > Link > BeoLink > BeoLink Gateway > TIPS and lookup e.g.:
	 Supported IP cameras How to set up Home Control menu on TV and driver for IHC. KNX and Phillips Hue
	 Links to BeoLink Gateway video demo and setup tutorial etc.



How to use this installation guide		Introduction	
	This installation guide is designed to give the installer the opportunity to understand and follow an installation process in the relevant situation.	How to use this installation guide	
	It will support in achieving a correct setup of BeoLink Gateway and thereby a	Concept	
	smooth operation.	Terminology	
	This installation guide provides:	Connection panel	
-	Description of concept and defining the terminology used. Guidance in installation and cable connections.	LED indications	
-	Accessing the BeoLink gateway.	Installation overview	
-	Setting up the BeoLink Gateway - step by step description of tools and sequence of designing the entire automated home installation.	Mounting	
-	Index and Table of contents for quick look up of subjects.	Home Automation systems supported - connection types	
Warning		ServiceTool	
	installation and replacement of parts should be made by Bang & Olufsen certified installers only.	Cable connections	
Navigation in this guide		Accessing the BeoLink Gateway	
	When the guide is opened, it automatically opens in Full Screen Mode (can be left as desired, see below). This is primarily done to entimice the usability of screen	Setup of BeoLink Gateway	
	reading. There are several ways to navigate when using the guide, see the survey of keys, shortcuts and hot keys below:	Connection specifications	
		Index	
	 ✓ ✓ ✓ (arrow keys on the keyboard) havigates to the next page ↑ / ← (arrow keys on the keyboard) navigates to the previous page 		
	Navigates you to the previous view		
	(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 at the bottom of the screen (see below for explanation).		
	Navigates you directly to the start page		
	Navigates directly to the table of contents (these are active links - cli	ck the link to be directed directly to the associated section)	
	Prints the document - the print dialogue box opens (Ctrl + P also br	ings up this feature)	
Navigation TIP			

The right side of this page and the Table of Contents, page 3, acts as an active table of contents. Simply click the subject you want and you are transferred to the section in question.

One remote	
	One remote control solution can control each product or function in the entire setup. Furthermore more products and functions can be programmed to scene settings as desired
	Just mentioning a few: light, shades/blinds, temperature regulation, On/Off functions, audio, video, surveillance camera.
Scenes	
	Scenes could be: cinema mode, dining mode, good night, coming home, leaving home, start heating/cooling, view door camera, party, etc.
One touch operating principle	
	Just by one touch the above scenes are activated. This is despite which operating solution that is chosen. And operation possibilities are of course adapted to the tool chosen.
	I ne tools are: Bang & Olufran ramata cantral: Band, BanE/Bané, BanBamata Ona
	- baily & Oldisen remote control. beo3/beo3/beo3/beo8, beoxempte One.
	- ReoRemote Ann on iOS based band held devices
	 TV overlay.
Setup	
p	Almost similarly simple is the setting up of the home automation system in the BeoLink Gateway as well as creating macros to be executed when an event happens.
	Almost total freedom exists in designing the home automation control system by creating the areas, zones and placing the systems and resources.
	These terms and use are explained in this Installation Guide.
	To make a better overview of the home automation installation, the project is organized in: Areas, Zones, Systems and Resources.
	An Area is subdivided in Zones. Systems (i.e. the BeoLink system and the various home automation systems) are organized under Systems.
	Note: There is full flexibility in organizing the structure, although it is recommended to arrange the systems in the 'global' area/'global' zone and to
	built and organize a logical structure as desired matching the surroundings that the entire home automation solution shall cover.
	These can later be reorganized, renamed, deleted and subdivided further.
	are all regarded as Resources .
	In the Resource page the linking between a product and a zone is assigned.
Current configuration	
	Every time changes are made - in any of the configuration menus - the changes takes effect immediately - this is the 'current configuration'.

Terminology	
	Notation:
	Often the terms area and zone or area/zone are mentioned at the same time and the notation 'global' area/'global' zone is often used.
Project	
	The project dialogue is holding information about where the BeoLink Gateway is used. The display name will be displayed in user interfaces identifying the installation e.g. by family name, name of house or any other short name.
	All other information in this page is only visible when opening the Project page, giving details on identifying the installation, who has made the installation and contact information. See page 21.
Areas	
	One area may be sufficient to circumscribe the premises that the home automation setup is influencing. Where the premises are huge, complex or it is just desired to organize in smaller units, more areas may be created to subdivide the entire premises.
	Examples could be an area for each floor level; another example could be to subdivide in living house, courtyard, pool area, and guest house. In short the number of areas is a matter of subdividing into smaller entities
	Areas can be added, renamed and removed
	Note: each area is subdivided in zones; see below.
global area	
	A special area is named 'global' that is a virtual area. The content can be 'reached' from any other area or zone. The 'global' area is per default subdivided in a 'global' zone'; see below. The 'global' area can be renamed or deleted.
Zones	
	Zones are logical entities that are used to subdivide an area. As an example, the living house area may be subdivided into: Kitchen, living room, sleeping zone, garage etc.
	Zones are place holders for resources (see page 30). In the Resources menu the resources (systems) are assigned to the zones.
	Zones can be added, renamed and removed. Zones can be assigned an icon (except for the 'global' zone), that will be shown in the user interfaces.
global zone	
	A special zone called 'global' exists per default under the 'global' area. The 'global' zone can be renamed if desired. The global zone is the placeholder for resources (see page 30) that apply to more zones or the entire premises.
	The global zone is typically a utility room. The 'global' zone can be renamed only and cannot be assigned an icon
	The systems, e.g. BeoLink and home automation systems can be placed in the global zone together with virtual resources; see page 7.

Syst	Tems	
		Three types of systems exists as explained below.
	BeoLink system	
		The BeoLink System (i.e. all Bang & Olufsen products based on Network Link and Master Link that are connected to the BeoLink Gateway) is regarded as an internal system. The BeoLink System can only appear once in the installation. The BeoLink System is per default assigned to the 'global' area/ 'global' zone'
	Home Automation systems	
		Each Home Automation system is assigned to an 'area/zone'. This is despite the Home Automation system, may serve more zones where each of the products the system consists of are placed.
		Systems are invisible in the daily use from a user interface point of view. The Home Automation systems may consequently be assigned to the 'global' area/'global' zone. Systems are usually assigned to zones by the installer in the Systems page.
		The products making up the system are linked to the area/zone in which it is physically placed. This is assigned in the Resource page.
	Virtual Resource systems	A Virtual Resource system is per default assigned to the 'global' area/'global' zone. The Virtual Resource system is the place holder for virtual resources.

Resources	
	Resources typically fall into a group as e.g.: button, function, device etc.
	Resources are identified by:
	- Zone: The zone they belong to.
	- Name: A name for easy identification. (The name can be 200 characters in length. The ASCII characters from 32 to 126 (incl.) can be used.)
	- Type: A type e.g.: button, function, device etc.
	- Address: An address that is a unique identifier. The format of the identifier is system dependant.
	When a resource is placed in an area/zone that are later reorganized i.e. deleted, the resource must also be reorganized. The area/zone can first be deleted when no resource or system is related - else a message appears.
Virtual Resource	
	A Virtual Resource is typically a button (scene) operated from the user interface, and it is programmed by a macro. A 'Virtual Resource' is per default assigned to the Virtual Resource system.
	A Virtual Resource has no function itself, but the related macro executes the programmed user actions.
	The 'BeoLink' system (as concept) is per default assigned to 'global' area/'global' zone.

https:/	/beowor	ld.org
	/	

Macros	
	Macros are used to organize interaction between the different devices in the home installation.
	A macro consists of events and commands. When an event happens the commands will be executed in order. In other words, the Macro is
	triggered wether it is physical (e.g. a button) or virtual (on a user interface).
	Macros are assigned to zones where the event takes place, even when it is physical or virtual.
Events	
	Events are represented by a code for each row of the event list (any code start with: 'area'/'zone'/'type'/'name' followed by a value or an action.
	An event is either of the three types:
	- Resource event, matching a specific event on a specific resource.
	Example: LIGHT 3 was pressed on the TV in the dining room.
	- Generic event, apply to a set of similar events throughout the house. (more zones).
	Example: a button named PARTY was pressed on any zone, any area.
	- System event, include calendar and astronomical clock events, front panel button events and system connectivity events.
Commands	
	Commands are the actions executed whenever a macro is triggered.
	Commands can be either of the four types:
	- Generic commands apply to any area or zone, with the option to select the same area or zone where the event was generated.
	- Resource commands apply to a specific resource.
	- System commands act directly on the systems that support them.
	- Macro commands call other macros, or act on other macros.

BANG & OLUFSEN

Interfaces		
	In the Interface page settings and handling of: users and user rights; configuring A/V products, cameras; zones and favourites lists are made. The following is just an overview; see details page 40.	
Users	The users with administrator rights can create new users and handle user properties and user rights	
B&O Products	Settings for each AM product and related sources can be handled: i.e. which source buttons to display on the Beol ink App	
Cameras	Settings for each A v product and related sources can be nandica, i.e. which source battons to display on the beoLink App	
Carrieras	Setting up cameras is made from this subpage.	
Zones setup	For each zone, the resources are listed and some settings can be changed and the resource can be made hidden/visible.	
Favourites Lists	Is a list of provided channels for radio or TV (e.g. subscribed to). Examples are Boxer, ViaSat, Sky, etc. With each of these source providers, it is possible to set up favourite channels.	
User Interfaces		
Webpanel		
	Access BeoLink Gateway using a web-browser on a computer and enter the IP address (e.g. 192.168.1.10) as URL.	

📍 CINEMA LIGHT

BeoLink App on a hand held device.

Via iOS based devices using the BeoLink App. Note that the device must access the same home router/AP as the BeoLink Gateway is connected to.



TV overlay

Via Network Link based TVs, using a remote control:

- BeoRemote One: Add HOME CONTROL to the TV LIST. It is recommended to keep the HOME CONTROL as one of the top positions in the displayed for easy accessibility.
- Beo4 (Type 1710 or newer and with Database 1.30: check by your Bang & Olufsen retailer). Add HOME CONTROL to the TV LIST.

It is recommended to keep the HOME CONTROL as one of the top positions in the displayed for easy accessibility.

 Beo4 (Type 1710 and newer; with old FirmWare). Add RETURN to LIST (Stby+LIST, then press <Centre> and select AV? using <Centre up> and press <Centre>, then select REMOTE using <Centre up> and press <Centre>, and ADDED is shown to confirm selection. Press and hold BACK to leave setup.

It is recommended to keep the HOME CONTROL as one of the top positions in the displayed for easy accessibility.



Network source

Network source is a source selected from another Network Link product (borrowed source).

BANG & OLUFSEN

Connection panel

USB (RS232)		
5V = USB (RS232)	The USB sockets (two pieces) are for RS232 and RS485 connections to Home	
0.54	Automation systems. A USB to RS232 (D-SUB 9) cable is needed; e.g. Bang & Olutsen Part No. 6100051. For RS485 connections an RS232 to RS485 converter must be	
	added to the above mentioned cable.	5V= 0.5A USB (RS232)
	When more than two system using RS232 protocol are connected a USB hub is	
	needed.	RJ45
NETWORK LINK	The NETWORK LINK conjugation for DIAE connectors to connect the Dealink Cotoway	
■ NETWORK LINK	to the Network Link switch or B&O Recommended Router. The BeoLink Gateway will	MASTER LINK
	either receive an IP address via DHCP or have a static IP address; see page 19.	© []
	IP-based Home Automation systems are connect to the Network Link in the same way.	<u>М</u>
	Network Link Product Cable and Network Link Installation Cable, Cat 7 quality, are	LED • O SETUP BUTTON
~	recommended to avoid non-desired hoise and interference.	
	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 N	Master Link system. This makes it possible to control a
	compatible audio and video system throughout the entire setup. The connections in the F	RJ45 socket are also found in the ML socket; see
	page 58.	
	The RJ45 socket is used if the Master Link cable is equipped with an RJ45 plug.	
	The ML socket is used if the Master Link cable is equipped with a Master Link plug.	
SETUP BUTTON		
	The SETUP BUTTON can be used during normal operation by pressing and holding the b	utton; see page 12.
LED		
	The LED indicator gives feedback about the status of the system and about functions cho	sen with the SETUP BUTTON; see page 12.

BANG & OLUFSEN

Functions - by Setup button

LED indications

The LED in the lover edge of the connection panel gives feedback about the system status of the BeoLink Gateway.

Green	Red	Description
Solid	-	Normal operation
Flashing quickly	Flashing quickly	Critical error
-	Solid	H8/FEP/FPGA update
Flashing slowly	-	Software update/System boot
-	Flashing slowly	Master Link synchronization



The **Setup** button placed next to the LED provides a number of functions as described in the following.

- Press and hold the **Setup** button and the system will cycle through the functions. The LED indicates the function number by flashing red a number of times: function no 1 = one flash, function no 2 = two flashes, etc.
- Count the number of red flashes while holding the **Setup** button, and when the desired number is reached let go the button.
- The LED indicator starts to flash red.
- To confirm the function execution the setup button should be pressed again within 3 seconds.

No.	No. Function Description		
1	System event	Executing macros with EVENT	
2	Reset password to default	'Password' to factory default	
3	Fixed IP-address	Enables the default static IP-address (192.168.1.10)	
4	Factory default	Erases configuration and settings	
5	-	-	
6	Dynamic IP-address	Enable DHCP (dynamic IP-address)	

BANG & OLUFSEN

Installation overview

Basically there are two different types of connections between BeoLink Gateway and the supported device (home automation systems). **Ethernet** or **USB/RS232** connection. The connection types are illustrated below:



BANG & OLUFSEN

Mounting

Rack mounting

A rack-mount installation is preferred if possible. The below illustration is an example of how to place a BeoLink. The BeoLink Gateway may be placed front most in the subrack which also has room for another 4 similar products (BeoLink Gateway, BeoLink Converter NL/ML) and/or other Bang & Olufsen products; see **BeoWise** > **3rd party products** > **Brackets** for possible solutions supported by Bang & Olufsen: see <u>rack mount</u>.



Rack-mount warnings

Operating temperatures.

The operating ambient temperature of the rack installation may be higher than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature of +50°C (+122°F).

Reduced air flow

Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

BANG & OLUFSEN

Wall mounting

A wall bracket (optional) exists (Bang & Olufsen Part No.: 1200225)



② Mount bracket plate on wall.

③ Place screws in recess as shown.

Shelf placement

When rack-mount installation is not possible, the BeoLink Gateway can be placed on its feet on a stable surface. Such shelf could also be in a 19" rack. A shelf can take both a BeoLink Gateway and a BeoLink Converter NL/ML placed side-by-side.

Home Automation systems supported - connection types

The below table gives an instant overview - as per date while writing - of systems supported and their connection type.

See **BeoWise** > **3rd party products** > **Home Automation** for an up-to-date list of supported systems.

Home Automation system drivers	Ethernet connection	RS232 connection	RS485 connection
Clipsal	+		
Conson Concept XP (converter from RS485 to RS232 is needed)			+
Custom Strings	+	+	
Dynalite		+	
KNX (EIB KNX, Busch Jaeger)	+		
KNX (FT 1.2, PEI-IOmode)		+	
KNXnet (IP tunneling)	+		
Legrand Bticino	+		
LK IHC (Intelligent House Control, Viewer models only, LexControl)	+		
Lutron: Grafik Eye (GRX), Grafik QS (QSE), Radio RA	+	+	
Lutron: Home Works, Home Works QS, Home Works Radio Ra2,	+		
Lutron Home Works Interactive		+	
Phillips Hue	+		
Smart House	+	+	
Vantage	+	+	
Velux	+	+	

Home Automation Control systems *	Ethernet connection	RS232 connection	RS485 connection
Crestron	+	+	
AMX	+	+	
Control4	+	+	
Beckhoff	+	+	

! Do not use RS232 cables that exceed 10 metres. Cable length of 2 to 5 metre is recommended.

Use the **Help** function in the BeoLink Gateway **Setup** > **System** regarding details on the BeoLink products and individual home automation systems.

* Drivers are available on www://mlgw.bang-olufsen.dk/drivers.html and does not support two way status from Network Link Prodducts.

ServiceTool	
	Connect the ServiceTool to the BeoLink Gateway which will support in the following areas:
	- SW update.
	- Web interface.
Software Update	
	This ServiceTool page is used for SW update of the BeoLink Gateway. The available SW packages on the ServiceTool Computer can be searched for
	and be installed. Follow instructions on the ServiceTool page.
Web interface	
	The Web panel can be viewed on the ServiceTool screen.
Connection	
	The ServiceTool can access the BeoLink Gateway either via the home router/AP or by a direct cable from the Ethernet socket of the computer to
	the Network Link (Ethernet) socket of the BeoLink gateway.

BANG & OLUFSEN

Cable connections

- Connect the Ethernet socket using a Network Link Product Cable to the B&O Recommended Router or to the ISP Router/switch, see page 13.
 [See BeoLink Handbook regarding Active Infrastructure - Network Setup and regarding appropriate cables].
- Connect the Master Link cable from the installation to the ML socket.
 [See BeoLink Handbook for appropriate cables].
- Connect the RS232 cable to RS232 based system(s) or to a powered USB hub that connects to RS232 based systems.

[The USB to RS232 cable converter has Bang & Olufsen Part No.: 6100051].

- Mount mains cable in the wire holder as illustrated.
- Mount BeoLink Gateway in the rack system, wall bracket or place it on a stable surface.

Now BeoLink Gateway is ready for setup.



Accessing the BeoLink Gateway	
	When BeoLink Gateway is delivered, it is per default set to DHCP. This means it gets its IP address from the router it is connected to.
	Assess to the Declink Category and he done in memory one of which three are dealty with in the following
	Access to the Beolink Gateway can be done in more ways, of which three are dealt with in the following.
Accessing in DHCP mode	
	The BeoLink Gateway gets its IP address from the router it is connected to (the ISP router or the B&O Recommended Router). Similarly connect the
	computer to the router, and enter the IP-address of the router (e.g. 192.168.1.1) in the network browser and look-up the IP-address allocated the
	BeoLink Gateway. The computer must be in DHCP mode.
	Enter this address in the network browser to access the web-interface of the BeoLink Gateway.
Accessing in static IP address mod	le
	When the BeoLink Gateway is assigned a static IP-address, according to the network plan determined by the router, the web-interface of the
	BeoLink Gateway can be accessed by entering this address in the network browser.
	To access the BeoLink Gateway in this way, it must first be connected (in DHCP mode) to the router and the static IP-address is then set as
	described in Network settings page 22.
Accessing directly	
5	The BeoLink Gateway is set to fixed IP-address mode by activating the Setup button function (3); see page 12.
	The computer and the Network Link socket of the BeoLink Gateway must be connected directly to each other using an Ethernet cable. The computer must have an IP address in the same range, e.g. 192.168.1.11 with subnet mask 255.255.255.0.
	The BeoLink Gateway is then accessed directly by the factory default IP-address: 192.168.1.10 entered in the network browser.
	This method can also be used if the IP address is forgotten.
Discover IP addresses	
	There are more ways to find out which IP address a device has in a network. The rfollowing metds are examples:
-	Use a network scanner/IP-scanner, e.g. the free-ware: Fing. Best result is obtained using a hand held device; remember to access the Wi-Fi network used for the BeoLink Gateway.
-	Use the BeoLink Setup App; remember to access the Wi-Fi network used for the BeoLink Gateway.
-	Use a computer on the same network as the BeoLink Gateway and using e.g. the Safari browser. Lookup BLGW.local as URL and the Bonjour

Accessing the web interface		
	To access the web-based user interface:	
	- Open a web browser and enter the IP-address chosen to be used for the BeoLink Gateway in the address field and	d press Enter .
	Now the BeoLink Gateway web interface appears.	RANG & OI HESEN
	Two choices are available:	BeoLink Gateway
	- WEBPANEL is chosen to operate the Home Automation system via this interface. The entire Home Automation	
	installation can he operated by various methods, see page 5.	WEBPANEL
	- SETUP is chosen to get access to all settings possible in the BeoLink gateway, see page 20.	SETUP
SETUP		
	- Press the SETUP button to access the BeoLink Gateway setup functions.	
	The setup functions are used for first time setup or any other setup of the system.	
	Now the login box appears.	
First time login		Login
riist time login	Type (admin) in both fields and click Login	
	(The Liser name 'admin' evists nor default and cannot be changed whereas the related Password can be	User
	changed by the user later); see page 41	Paceword
	changed by the user later), see page 41.	
User login		
	Other users can be created by entering a unique user name and a related password; see page 40.	Login
	Users can login either using their User name and related Password that is given access rights; see page 40.	
	Now the web-based setup interface appears by opening the Project page on the screen; see page 21.	
WERDANEL		
	The WEBPANEL button is used to operate the entire system via this Web-interface	
User interfaces		
	See page 9.	

Set up the BeoLink Gateway				
	After login to the BeoLink Gateway, the menu bar is prese	ented and the Project menu is op	ened per default.	
	In the following the menus in the menu bar (see below) a	nd their submenus will be presen	ted, describing the func	tions provided.
	Project Setup Zones Systems Resources Macros Interfaces	Tools - Configuration - Help		
Project				
	The Project page (see illustration to the right) is used to state information regarding the project that the	Project Setup Zones Systems	Resources Macros Interfaces	Tools - Configuration + Help
	BeoLink Gateway is part of.	Project name	Installation Guide	
	The information entered are useful in any later service situation	Display name	IG development	
		Installer name	ABW	
	Note: Only the Display name is visible in the user interfaces except the Webpanel (access directly on the	Installer contact	454334	
	BeoLink Gateway).	BeoLink Gateway v1.1.0.18251		System connection status BeoLink KNX - EIB
- - -	Project name i.e. a distinguishing name for the project/ setup; any name, number etc. Display name: i.e. a name of the BeoLink Gateway that wi the family name or the name/number of the house. Installer name: i.e. name or initials of the installer in case of Installer contact: i.e. phone number, and company name,	ill be shown in all interfaces: Beo of returning a question/comment technician name, installer name	Link App, WEB panel etc to this. re. the installer who mac	:. Examples of display name are: de the installation and
	programming of the BeoLink Gateway Setup.			

Setup	 In the Menu line click the tab Setup to go to Setup pa Protocol. 	ge that provides setting	s in three areas: Netw	ork settings, Date &	Time and Integration
Network					
	In Network the BeoLink Gateway is set up to the network it is connected to.	Project Setup Zones	Systems Resources Ma	acros Interfaces Tools -	Configuration - Help
Hostname		Setup	Network settings		
	The Hostname is the name of the BeoLink Gateway as it is found in the LAN	Nelwork Date & Time Integration Protocols	Hostname	blgw	
	Note: The Hostname must always be a single word,			DHCP enabled	
	consisting of a combination of: capital letters, small		Address	192.168.1.10	
	letters and digits.		Mask	255 255 255 0]
DHCP			DNS Server	192.168.1.1	
	Per factory default DHCP is enabled, marked as \boxed{V} .		Gateway	192.168.1.1	1
	check mark $$ in the check box \square next to DHCP enabled.			Apply	
	It is recommended to reserve an IP-address in the				
	router or use a static IP-address if DHCP is disabled.	BeoLink Gateway v1.1.0.18251		System	connection status: BeoLink KNX - EIB
Address	If the DHCP is disabled in the router, the IP-address mu	st be entered manually i	n the Address field. D	efault IP-address is 19	02.168.1.10.
Mask					
	Settings must be according to the same settings in the	router for the Network	Link. Typical value: 255	5.255.255.0.	
DNS Server					
	Settings must be according to the same settings in the	router for the Network	Link. Example: 192.16	8.1.1 or an external se	erver IP address.
Gateway	Settings must be according to the same settings in the	router for the Network	Link Example [,] 192-16	8 1 1	
Ammlu	settings must be according to the same settings in the		Entre Example: 152.100		
Арріу	The above settings must be applied by pressing the Ap	ply button.			

ate & Time		Project Setup Zones Svi	stems Resources Macros Interfaces	Tools -	Configuration + Help
	Correct time setting is important		anne i chiadanaase minister i mistoaase	(Addition)	
	for the monitoring of events,	Setup	Date & time settings		
	astronomic clock events and for	Network	Date	2015 2 25 Set	
	time stamping the error log.	Date & Time			
	The system will work even if the		Time	9 0 45 Set	
	time setting is not correct.				
	The date and time settings can		Disab	sle automatic synchronization to set clock mai	nonly
	be synchronized with universal			CF Supphrapize from internet	
	time servers (recommended) if			M Synchronize from internet	
	the BeoLink Gateway has access		Timezone	Europe/Copenhagen Cur	rrent offset from UTC 1
	to the Internet. Else date and				
	time can be set manually.		Location settings (Astronomical Clo	ck)	
Date			Latitude	55.4	
	Settings for year, month and day				
	are entered and then press Set .		Longitude	12.35	
Time					
	Settings for hours, minutes and	Real Job Catavariat 4.0 40004			Providence and a state of the s
	seconds are entered and then	DeoLink Galeway VI.1.0.16251			System connection status Beolini, KNX- EID
	press Set .				
Synchronize from internet					
5	Synchronizing with an external time	e server by setting the chec	k mark √. Remove the check n	nark to disable the synch	ronization with the time
	server.				
Time zone					
	Setting for the time zone is chosen	from the drop down list. C	hoices are made based on an a	ppropriate match of 'Cor	ntinent'/'City'.
Location settings (Astronor	mical Clock)				
	The Location settings are used by the	ne BeoLink Gateway to calo	culate, e.g. sunrise and sunset.	Events can then be set re	lative to this.
	Latitude and longitude are the setti	ngs for the astronomic cloc	:k.		
	The settings are in decimal degrees	. Values are entered in the	format 'degrees.minutes'. Seco	nds are only used to rour	nd the minute-value.
	Positive values are for North and Ea	st.			
	Negative values are for South and V	West.			

Integration Protocol - over Ethe	ernet	Project Setup Zones Sys	ems Resources Maci	ros Interfaces	Tools -	Configuration +	Help
	The Home Integration						
	Protocol - Over Ethernet	Sotup	Home Integration Pro	otocol			
	(upper part of the page) is	Setup					
	intended for later use.	Network Date & Time	Over ethernet				
		Integration Protocols		TCP port	9100		
	The MasterLink Gateway				Enable		
	Protocol - Over Ethernet						
	(lower part of the page) makes it						
	possible for hand held devices		MasterLink Gateway	protocol for backw	vard compatibility with MLGWP		
	and home automation		Over ethernet				
	controllers (other devices) to		over ethernet	TCD port	9000		
	interact with the Beol ink			TCP por	5000		
	Gateway				Requires authentication		
	The Integration protocol can be				Enable		
	enabled on the local network						
	(Ethernet) as well as on the		Over R S232				
	RS232 port			USB serial adapter			
	Notal To be able to use the						
	Bool ink App the Integration			Bit rate	9600 •		
	protocol must be enabled on the						
	local notwork						
	local network.	BeoLink Gateway v1.1.0.18251				System connection status: BeoLink	KNX - EIB
TCP port							
	For the LAN a TCP port must be all	ocated. The default port is s	9000. Ports below	1024 are rese	erved for standard TCP	services.	
Enabled							
	With a chockmark set in V Enable	d the integration protocol	TCP protocol over	Ethorpot) is	anablad		
				Ethernet) is e	enableu.		
Requires authentication							
	Authentication is optional.						
	Authentication is required if √ Ena	abled is chosen and if the 🗗	/ Requires authe	entication is	chosen.		
	Consequently user name and passv	word must be given when c	onnecting to each	system.			
Disabled							
DISADIEU	It could be performed to disable	the function if a controllar	connected to the P	lool ink Cator	Nov door not curport	authantication	
			Connected to the B	eolink Galev	way uses not support a		

Integration Protocol - over RS232

The Integration Protocol - Over RS232 (lower part of the page). The USB to RS232 converter cable, also used for connecting to the Bang & Olufsen ServiceTool, can be used to connect each system using the RS232 protocol.

A bit rate must be selected.

Select between the following bit rates: 9600 bps, 19200 bps, 38400 bps, 57600 bps, and 115200 bps.

The RS232 connection does not require authentication.

BANG & OLUFSEN

Zones

Areas and zones

	Areas are indicated by text on a grey background in the left	Project Setup Zones Sys	stems Resources Macros Interfaces	Tools -	Configuration -	Help
	column.	Areas & Zones	Zone settings			Delete
Adding areas and zones	Zones that are subdividing the areas are indicated by text on a white background in the left column. Areas are added using the Add new area control. When adding an area, a name for this can be stated.	Areas & Zones	Nam Arei Icor	a Cinema a Floor 1 ★ ● ★ ● ★ ● ★ ● ★ ● ★ ● ★ ● ★ ● ★ ● ★ ● ★ ● ● ★		
	An area can be deleted by activating the x -sign in the greyed area-boxes and renamed by activating the 2 -tool.			→ [★] [●] [●] [●] [↓]		
	Zones are added to the areas by activating the + -sign in the greyed area-boxes. In the Zone settings window the	BeoLink Gateway v1 1.0 18251	• 5 1 H 1	System cor	nection status BeoLink	KNX - EIB

zone can be given a name entered in the **Name** field and the **Area** it shall belong to can be chosen from the drop down list. An icon can be assigned that will be visible in the user interfaces, for easy recognition.

A 'zone' selected from the structure can be deleted by activating the **Delete** button. Systems and resources in a zone that shall be deleted must be rearranged or removed.

BANG & OLUFSEN

'Global' area and 'global' zone	
	'Global' area has its own 'Global' zone that is a special zone. 'Global' area/'global' zone is the placeholder for systems (see page 28) and their resources (see page 30) that apply to the entire house (recommended; although systems may be placed in areas/zones as desired. Likewise macros that act on several zones at a time such as 'Party mode', 'Welcome' and 'Good Night' may all be added to the 'Global' zone; see page 33. The 'global' zone cannot be deleted and cannot be assigned and icon; see page 27.
Zone Settings	
Name	
	Name of zone. In BeoLink Gateway a zone can be one or more rooms in the house or even part of a room, e.g. : living room, kitchen, bedroom. The Name is stated as desired.
Area	
	Name of area. An Area can be subdivided in one or more zones. Areas are used as structural elements e.g. when handling big installations. An area could be: house, guest house, floor levels in house, courtyard, summer house etc.
	By choosing another Area from the drop down list, the marked zone will be moved to that area.
lcon	
- -	When adding a new zone: A 'Zone' can be found quickly by typing into the 'Filter' box. A 'Zone' can be assigned an 'Icon' (see illustration), which will be visible on the user interfaces together with the name the zone is given. It is also possible to rename, remove or move a 'Zone' to another 'Area'. When a zone is chosen, the icon selected to be assigned the zone is marked with a yellow labelled background. A 'Global' zone' can only be renamed.
Delete	The Delete button is seen when a zone is marked and activating the Delete button will delete the zone.

BANG & OLUFSEN

Systems

System settings

Select + to add a new home Systems Resources Interfaces Tools Configuration -Project automation system from the global / BeoLink drop down list. A System may be Go to system help Delete Systems - Driver name, BeoLink added in a specific area/zone Filter when it only serves functions Settings Floor 1 / Cinema there, else if a system serves Floor 1 / Kitchen more zones it may be added to Name BeoLink the 'global' area/'global' zone. Floor 1 / Living Room ~ global/global Zone Any of the supported systems Floor 2 / Bath Room can be added, except internal Floor 2 / Child toom systems, which only appear once BeoSound 5 Floor 2 / Sleeping Room in the installation, such as BeoSound5 host global / global BeoLink and Virtual Resources that are added by default; see KNX - EIB Virtual Resources page 30). BeoLink Gateway v1.1.0.18251 System connection status BeoLink KNX - EIB When selecting a system added

The systems settings is for setting-up systems connected to BeoLink Gateway. BeoLink systems and Home Automation systems are 'systems'.

to one zone, it is possible to select another zone in the **Zone** drop down list, by which the system is moved to that zone. A system can also be rename and the configuration and connection settings can also be changed.

Systems are assigned to zones by the installer. Systems are invisible in the user interfaces.

BeoSound 5 host

When a BeoSound 5 is part of the system setup, the IP-address for this must be entered in the BeoSound 5 host entry field

System status icons

For each system installed, a text string icon is shown in the bottom of the screen (e.g. KXCEES). The status of each system is indicated by a colour of the background of the text string icon. Green = Online; Orange = Connecting; Red = Error; Grey = Synchronizing. This gives a quick status indication on each system. Moving the mouse pointer to each icon displays a pop-up message. If a system cannot connect, the system logs should be checked for information about the problem.



Resources							
	Resources are provided from the sy buttons, sensors); Virtual resources	ystems installed: BeoLink sy s (programmed resources e	stem (A/V products a .g. related to a butto.	and its connecte n on a user inte	d sources); - Home Autor rface or based on an eve	mation system(s) nt, e.g. tempera) (e.g. iture and
	sunset) and systems themselves (e.	.g. Web-cam).					
	In the Resources page the resource	es related to the installed H	ome Automation sys	tem and related	buttons (i.e. the compor	nents it comprise	es) can
	be fetched by using the Capture fu	nction or made manually. T	The Import resources fu	nction is import	ing preprogrammed reso	urces.	
Resources in BeoLink							
	The resources have the following parameters:	Project Setup Zones S	iystems Resources Macro	os Interfaces Too	ls -	Configuration -	Help
Zone		Resources by system	Resources in BeoLink	¢		Filter	
Zone	The zone to which the resource	They	Zone	Name	Туре	Address	
	belongs - press Select zone 🗸	global / global	Floor 1/Cinema	Avant 75	NetworkLink product (AV renderer)	12345678	×
	and select from drop down list.	BeoLink KNX - EIB	Floor 2/Sleeping Roo	BeoPlay V1-32	NetworkLink product (AV renderer)	12345679	×
Name			Floor 1/Living Room	BeoVision 11-55	NetworkLink product (AV renderer)	12345680	×
	Enter a name (see page /) to ease identification of the		Floor 1/Living Room	BeoSound Moment	NetworkLink product (AV renderer)	12345681	×
	resources.		Floor 1/Kitchen	BS 5 BM5	MasterLink product (AV renderer)	12345690	×
Туре			- Select zone -	Name	- Select type -		Add
51	Select type from the drop down		Capture				
	list - press Select type 🗸 . The						/
	type of available resources	BeoLink Gateway v1.1.0.18251			System	connection status BeoLink	KNX - EIB
	depends on the actual A/V				Select zone Floor 1/Cinema	- Select type MasterLink product (AV	(renderer)
	product (BeoLink ressource types c	an only be NetworkLink pr	oduct or MasterLink	product).	Floor 1/Kitchen Floor 1/Living Room	NetworkLink product (A	V renderer)
Address					Floor 2/Child room Floor 2/Sleeping Room		
	Unique identification of a resource	. The format depends on tl	he system. NL is the s	serial number ar	nd		
	ML is a unique (but hidden) ML De	evice number.	-				
Capture							
,	An easy way to add resources is to	use the capture function.	This function is recon	nmended to be	used as often as possible	. Press Capture a	and then
	activate various components by wl	hich the BeoLink Gateway r	records these activitie	es as resources.	NL sources are captured a	and named auto	matically
	and sources on ML devices must b	e switched on manually an	d must be named ma	anually.			
	Resource selected from the capture	e list are added automatica	lly to the table of def	fined resources.			
	The capture functionality is suppor	ted by most systems.					

Home Automation System resources Systems Resources Macros Interfaces Tools Configuration -Resources in HA system The resources have the following Fliter **Resources in KNX - EIB** Resources by system parameters: Zone Address Name Type Filter Zone 0/1/5 Floor 1/Cinema Cinema Scene wall Button (BUTTON × giohal / global The zone to which the resource BeoLink Floor 1/Cinema Set Cinema Scene Boolean (_KNX_GROUP_ADDRESS) 0/5/5 × belongs - press -- Select zone -- 🗸 Virtual Resources and select from drop down list. Floor 1/Kitchen 🗸 Leaving Home KNX Button (BUTTON 0/5/0 × ~ 0/5/1 global/global All Light OFF Boolean (KNX GROUP ADDRESS) × Name Enter a name (see page 7) to Floor 2/Child roor V Night Light Dimmer (DIMMER) 0/2/0:0/2/1 × ease identification of the -- Select zone -- 🗸 -- Select type --Name Add resources. Capture Import resource Type Select type from the drop down BeoLink Gateway v1 1.0 18251 System connection status: BeoLink KNX - Ele list - press -- Select type -- 🗸. The type of available resources depends on the actual system, for instance: button, dimmer, Boolean (KNX GROUP ADDRESS) Floor 1/Cinema 1 Byte unsigned integer (_KNX_GROUP_ADDRESS) Floor 1/Kitchen I Byte signed integer (_KNX_GROUP_ADDRESS) Floor 1/Living Room shade etc. E.g. a standard button supports PRESS, HOLD and RELEASE actions plus a 2 Byte unsigned integer (_KNX_GROUP_ADDRESS) 2 Byte signed integer (_KNX_GROUP_ADDRESS) 3 bit controlled (_KNX_GROUP_ADDRESS) Floor 2/Bath Room Floor 2/Child room status indication (e.g. an LED that can be On or Off). Floor 2/Sleeping Room Toggle (BUTTON) global/global Some systems can extend the standard button to provide extra features (see this in the Button (BUTTON) Dimmer without state (DIMMER) Dimmer (DIMMER) drop down list). The purpose of having standard resource types is that such common set of features are GPIO (GPIO) shared by the most supported systems. Address Unique identification of a resource. The format depends on the HA system - using various number scheme. Capture An easy way to add resources is to use the capture function. This function is recommended to be used as often as possible. Press Capture and then activate various components by which the BeoLink Gateway records these activities as resources. NL sources are captured and named automatically and sources on ML devices must be switched on manually and must be named manually. Resource selected from the capture list are added automatically to the table of defined resources. The capture functionality is supported by most systems. Import ressources Most HA systems can save a list of ressource settings, that by using the Import resources button can be imported in another installation.

Virtual resources

	An example of a virtual resource is a button on the user interface	Project Setup Zones	Systems Resources Macro	os Interfaces Too	ols -	Configuration +	Help
	(BeoLink App, TV overlay menu,	Resources Husselam	Resources in Virtual I	Resources		Filter	
	Webpanel) e.g. a virtual button	Cher	Zone	Name	Туре	Address	
	for cinema scene.	global / global	Floor 1/Cinema	Cinema Scene	Virtual Button (BUTTON)	1	×
	Virtual Resources makes it	BeoLink KNX - EIB	global/global 👻	Leaving Home	Virtual Button with led (BUTTON)	2	×
	possible to define buttons for	VIENELIKOUNLES	Floor 2/Child room	NL Button	Virtual Button with led (BUTTON)	3	×
	systems, without implementing these directly. The BeoLink App		- Select zone -	Name	Select type -		Add
	currently uses virtual buttons for displaying scene buttons	BeoLink Gateway v1 1.0 18251			System o	unnection status. BeoLin	KNX - EIB
User experience	Virtual Resources have no functionality by themselves. Macro resource, with events and commar	os (see page 33) must be d nds in the systems.	efined to link user act	ions on a virtua	- Select zone - Floor 1/Cinema Floor 1/Litchen Floor 1/Liting Room Floor 2/Child room Floor 2/Child room Floor 2/Sleeping Room global/global	- Select type - Virtual Button (BUTT Virtual Button with lea	DN) (BUTTON)
·	Virtual Resources can appear as a singlemented by combining a set c	single functional entity on of macros for all the neede	user interfaces, hiding d actions on the butte	g the fact that i on.	nternally in the BeoLink G	ateway the reso	ource is
Addressing							

Virtual Resources have an address which is a unique number. The address is used by external controllers and applications to identify the resource. The number is defining the order of the buttons displayed in the user interface.

Macros

Macro Programming

The interaction between the devices connected to the BeoLink Gateway is defined by means of macros. A macro consists of a set of events and commands. When any of the events that are defined in a macro occur (e.g. a key press on a keypad; a Contro Command on a Bang & Olufser remote control etc.), the macro will be triggered. This means that the commands in the macro will be executed in order.

A macro is also assigned to area/ zone to which it belongs even if it handles activity outside the zone. Having macros assigned to

Macro by zone	Cin	ema Scene	on Floor 1/Cinema	\checkmark		Clone	Remove	F
Filter	Eve	ent						
Fibor 1 / Cinema Cinema Scene	+ Flo	or 1/Cinema/BUTTON/Cine ESS	ema Scene/				ß	ł
Floor 1 / Kitchen Leaving Home Floor 1 / Living Room	+ Flo	or 1/Cinema/BUTTON/Cine ESS	ema Scene wall button/				ø	1
Floor 27 Bath Room	+ Ad	d event Capture						
Figure cost defined in this zone Figure 2.1 Child room	+							
Night Light Floor 2 / Sleeping Room	+	Command				Wait (s/n	ns)	
No macros delineit in this sone global / global	+ =	Floor 1/Cinema/AV rend Beo4 command ? Cor	lerer/Avant 75/ mmand=TV & Destination selector	-Video_source	ß	0	0	- +
Par Stoy	=	Floor 1/Cinema/_KNX_0 SET ? VALUE=true	GROUP_ADDRESS/Set Cinema So	ene/	ß	0	0	t +
	=	global/global/_KNX_GR SET 7 VALUE=false	OUP_ADDRESS/All Light OFF/		Ø	0	0	t -

zones helps, when setting up user interfaces.

In the example shown for the cinema, a button exists in the room ('Cinema Scene wall button' captured in resources for the Cinema, as well as a virtual button ('Cinema Scene, created as a virtual resource).

Add event	
	The Add event button is used to add the two buttons (see above) that can be used to set the cinema scene. See "Resource Event" page 35.
Capture	When activating the Capture button and next activating the physical wall button and the virtual button on the user interface, there will be created the two events in the event-part of the display.
Add command	The Add command button is used to define the commands to be executed when either of the two buttons in the above example are pressed. With both events the 'Set Cinema Scene' resource in the home automation system is executed to avoid an endless loop. See "Resource Command" page 36.

Set up BeoLink Gateway - Macros - Resource Event 35

https://beoworld.org

source Event					
	When pressing the Add event button, see page 33, the window expands, and fields for the Resource Event are shown	Add event selector	c	Generic 💿 Resource — System	Any zone Floor 1/Cinema Floor 1/Kitchen Floor 1/Living Room Floor 2/Bath Room Floor 2/Sileeping Room
	and are filled in by making selections from the drop down lists with each entry field. The illustration is an example only, and drop down lists may yang depending on the	Filter by zone Resource	Floor 1/Cinema	- Choose resource Floor 1/Cinema/Avant 75 (AV r Floor 1/Cinema/Cinema Scene Floor 1/Cinema/Set Cinema Scene Floor 1/Cinema/Set Cinema Sc	global/global enderer) (BUTTON) wall button (BUTTON) sene (_KNX_GROUP_ADDRESS)
	choices made.	Event	Light		Choose event All standby Light Control
Defining Events	The list of events - for triggering a macro - can be filled in manually, or selected from	Command	STOP		Continue Key release Press
	recent events.		Cancel Add	STOP ALL_STANDBY	FUNCTION_17 FUNCTION_17 FUNCTION_18 FUNCTION_19 FUNCTION_2
	 There are three types of events: o Generic o Ressource o System Resource events Resource events match a specific event on a set of the system events System events include calendar and astronom Generic events apply to a number similar events 	Add event Capture specific resource. nical clock events and system nts throughout the house.	connectivity events.	CIFFER_0_Digit_0 CIFFER_1_Digit_1 CIFFER_2_Digit_2 CIFFER_2_Digit_2 CIFFER_5_Digit_3 CIFFER_6_Digit_6 CIFFER_5_Digit_6 CIFFER_8_Digit_8 CIFFER_9_Digit_9 CINEMA_OFF CINEMA_OFF CINEMA_OFF CINE_C_REWIND_Continue_G CNTL_C_STEP_UP_Continue_I CNTL_C_STEP_UP_Continue_Yello CNTL_C_VIND_Continue_Yello CNTL_PLAY CNTL_PLAY	FUNCTION_20 FUNCTION_21 FUNCTION_22 FUNCTION_23 FUNCTION_24 FUNCTION_25 FUNCTION_26 FUNCTION_27 FUNCTION_28 FUNCTION_29 FUNCTION_30 FUNCTION_30 FUNCTION_31 FUNCTION_32 FUNCTION_34 FUNCTION_35 FUNCTION_36
Event coding	Each event is represented by a code shown o zone/type/name.	n each row of the events list	. Event codes start with area/	CNTL_STEP_DW_Red CNTL_STEP_DW_Red CNTL_STOP CNTL_WIND_STOP CONTINUE_Continue_ (other_keys) CONTROL CURSOR_DW CURSOR_LEFT CURSOR_RIGHT CURSOR_RIGHT CURSOR_UP C_REWIND_Continue_step_D C_STEP_DW_Continue_step_D C_STEP_UP_Continue_step_UI C_WIND_Continue_WIND FUNCTION_10 FUNCTION_11 FUNCTION_112 FUNCTION_12 FUNCTION_13 FUNCTION_14 FUNCTION_15	FUNCTION_37 FUNCTION_38 FUNCTION_39 FUNCTION_40 FUNCTION_40 FUNCTION_5 FUNCTION_6 FUNCTION_7 FUNCTION_9 GO_PLAY KEY_RELEASE LIGHT MENU RECORD REC_RETURN_RETURN REWID SELECT_CURSO_SELECT STANDBY STEP_UP STOP

Resource Command

Resource Commands

When pressing the Add command button, see page 33, the window expands, and fields for the Resource command are shown and are filled in by making selections from the drop down lists with each entry field. The illustration is an example only, and drop down lists may vary depending on the choices made.

Commands are the actions executed when a macro is triggered. The list of commands is executed in order, and a delay can be set before each command as a combination of seconds and milliseconds. The list can be reordered by dragging the handles at the left of each row, or by clicking on the arrows on the far right of each row.

There are four types of commands: o Generic o Ressource o System o Macro

Resource command			🔿 Generic 💿 Resource 🔇) System 🚫 Macro	Floor 1/Living Room Floor 2/Bath Room Floor 2/Child room Floor 2/Sleeping Room global/global
	Filter by zone	Floor 1/Cinema	•		3,
	Resource	Floor 1/Cinema/Set Cinema S	Y	Choose resource Floor 1/Cinema/Avant 75 (Floor 1/Cinema/Cinema So Floor 1/Cinema/Cinema So Floor 1/Cinema/Set Cinema	AV renderer) cene (BUTTON) cene wall button (BUTTON) a Scene (KNX GROUP ADD
	Command	SET	-		Choose command
	VALUE	True			SET
	WaitBefore	0 50	ms		False

- Generic commands

Generic commands apply to any area or zone, with the possibility of selecting the same area or zone where the event was generated.

- Resource Commands

Resource Commands apply to a specific resource.

- System Commands
 System Commands act directly on the systems, which support them.
- Macro commands

Macro commands call other macros, or act on other macros.

Note: If the ressource is a Network Link product, and the command is a 'BeoRemote One Source Select' command , then the 'Network source' should be set to 'True' if the requested source is a network source (borrowed source).

Actions on macros	
	A macro can contain delays between commands, and therefore take some time to complete. What happens if, that during the macro execution,
	another related macro is called? Several commands act on macros:
-	FIRE: Call the macro, as if an event for that macro had happened. This is the default action.
-	CANCEL: Will stop executing an on going macro.
-	COLLAPSE: Will execute remaining commands in a on-going macro, but with no delays between commands.
	Firing another macro makes it possibly to take advantage of existing functionality without having to maintain several copies inside different
	macros. Although not recommenden, it is possible to make a loop where a macro calls itself as the last command, e.g. switching Off growth light
	for plants; night and day temperature control etc. It is required to make a macro that stops such loops.
Macro-considerations	
	As a macro execution can take some time due to delays between commands, it is important to take care of what could happen if another macro is
	triggered during the execution - for instance if a macro called 'THEATER ON' (for setting- up a home theatre) takes more than one minute to execute.
	What will happen if this macro is called repeatedly? Will all commands start to overlap each other?
	What will happen if the THEATER OFF macro is called to switch the home theatre off during the set-up?
	It is important to understand that a possible messy overlap of command executions from different macros may occur.
	The possibility to cancel or collapse a macro being executed ensures that the ongoing macro will end immediately.
	In the above mentioned example, the macro to switch the home theatre Off should first cancel the macro for setting-up the home theatre:
	THEATER OFF macro commands:
	1. Cancel THEATER ON macro.
	2. Raise screen.
	3. Shut down projector.
	4. Switch BeoVision to STAND-BY.
	5. Etc.
Orphan commands and events	
	If commands and events are defined for a resource, and the resource is deleted or modified to another address, events and commands will become
	orphan (without an associated resource)
	Orphan events and commands will still be available, and refer to the original addressing of the resource
	The macro screen will signal the presence of ornhan commands or events by colour coding and text in the macro beader
	The macro screen will signal the presence of orphan commands of events by colour couling and text in the macro fleader.

Generic programming					Floor 1 Floor 2
	Standard events and commands apply to a	Add event selector			New area
	single specific resource.	Generic resource event selector	🛞 Generic 🔘 Researce 🔘 System		Any zone Zone that fired!
	Generic programming makes it possible to				Cinema (4) Kitchen (2)
	refer to a whole set of resources at once.	Areas Any area		Choose resource	
		Zone Any zone ·		AV renderer/Any AV renderer AV renderer/Avant 75 (1)	(4)
	It is possible to specify:	незовке и тепаетелиции тепаете		AV renderer/BeoSound Mome AV renderer/BeoVision 11-55	ent (1) (1)
	 A single command to mute all products 	Event Control .		BUTTON/Any BUTTON (3) BUTTON/Cinema Scene (1)	
	called BeoVision.	Action		BUTTON/Cinema Scene wall BUTTON/Leaving Home KNX	button (1)
	- An event specification that matches any	Command Select an Option		_KNX_GROUP_ADDRESS/A _KNX_GROUP_ADDRESS/S	ny _KNX_GROUP_ADDRE et Cinema Scene (1)
	button pressed that is called Light On.	Cancel			Choose event All standby
	This has the following advantages:				Light Control
	A single macro can now substitute a lot of	Add event Capture			Continue
	macros proviously tailored for individual roso	urces and the list of events and			Key release
	macros previously tailored for individual reso	urces and the list of events and	Select an Option		
	lt encourages a consistent setur throughout	the installation		CURSOR_RIGHT	FUNCTION_30 FUNCTION_31
	- It encourages a consistent setup throughout	the installation.	BACK CIFFER 0 Digit 0	C_REWIND_Continue_REWIND C_STEP_DW_Continue_step_D	FUNCTION_32 FUNCTION_33
			CIFFER_1_Digit_1 CIFFER_2_Digit_2	C_STEP_UP_Continue_step_UI C_WIND_Continue_WIND	FUNCTION_34 FUNCTION_35
	Note!		CIFFER 3 Digit 3 CIFFER 4 Digit 4	FUNCTION_1 FUNCTION_10	FUNCTION_36 FUNCTION_37
	Generic events and commands are matched	against all possible resources every	CIFFER_5_Digit_5 CIFFER_6_Digit_6	FUNCTION_11 FUNCTION_12	FUNCTION_38 FUNCTION_39
	time an event occurs or a command is execu	ted. If the name of a resource is	CIFFER_7_Digit_7 CIFFER_8_Digit_8	FUNCTION_13 FUNCTION_14	FUNCTION_4
	changed on a working configuration, the res	ource will no longer match an	CIFFER_9_Digit_9 CINEMA_OFF	FUNCTION_15 FUNCTION_16	FUNCTION_6
	existing generic event or command. Therefor	e it is important to be consistent	CINEMA_ON CNTL_C_REWIND_Continue_G	FUNCTION_17 FUNCTION_18	FUNCTION_8
	when naming resources. It is also important	to avoid to spoil functionality by	CNTL_C_STEP_DW_Continue_ CNTL_C_STEP_UP_Continue_E	FUNCTION_19 FUNCTION_2	GO_PLAY KEY_BELEASE
	renaming resources.		CNTL_C_WIND_Continue_Yello CNTL_PLAY	FUNCTION_20 FUNCTION_21	LIGHT MENU
Command coding			CNTL_REWIND_Green	FUNCTION_22 FUNCTION_23	RECORD REC RETURN RETUR
Command Couling		ented by a sade. The main	CNTL_STEP_UP_Blue CNTL_STOP	FUNCTION_25	REWIND SELECT Cursor SELEC
	Command coding commands are also repres	ented by a code. The main	CONTINUE_Continue_ (other_keys)	FUNCTION_27	STANDBY STEP_DW
	unerence is that there is a new type of selec	for for matching the same area or	CONTROL CURSOR_DW	FUNCTION_29 FUNCTION_3	STEP_UP STOP
	zone as of the generating event.		CURSOR_LEFT	FUNCTION_30	WIND
	A <u>command code</u> starting with \$area/\$zone/	AV renderer/IV will act on all audio			
	and video renderers named 'TV' on the same	e area where the event generated and	a		
	command code starting with */*/AV rendere	r/TV can be used to work with all TVs	in		
	the house.				

Generic Resource Command



BANG & OLUFSEN

Interfaces

This menu is for setting up users Project Resources Macros Interfaces Tools Help an user rights and setting up the user interfaces generated by the Change password for admin user Control interfaces BeoLink Gateway. Users Current password It is possible to configure the New password **B&O** Products Floor 1/Cinema/Avant 75 following features : Floor 1/Kitchen/BS 5 BM5 Confirm new password Floor 1/Living Room/BeoSound Moment - Users that can access the system Floor 1/Living Room/BeoVision 11-55 Floor 2/Sleeping Room/BeoPlay V1-32 Change password and restrictions. Cameras - Sources and features of A/V Floor 1/Cinema/New camera Zones setup products. Eloor 1/Cinema Floor 1/Kitchen - Access to IP cameras in the house. Floor 1/Living Room Hoor 2/Bath Room - Resources and macros that appear Floor 2/Ghild room Floor 2/Sleeping Roon in a zone. global/global Favourites Lists - Virtual resources that provide a Boxer Netflix friendly way of interacting with Tuneln some systems. - Lists with favourite TV channels BeoLink Gateway v1.1.0.18251 System connection status BeoLink KNX - EIB and radio stations.

The resources to be accessed via the user interfaces are configured in this section of the Interfaces page. The user interfaces are: the BeoLink App running on a mobile devices, overlay menus in the TVs, and the Webpanel accessed from a computer.

Configurations are synchronized in real time towards the Webpanel and the TV overlay menu. The synchronization with the BeoLink App is done when activating **Configuration** > **Save revision**.

Users - admin

The user named 'admin' is a user that exists per default and is meant for the technician/installer, who has access for setting-up BeoLink Gateway and is allowed to access all zones via WEB or a mobile interface.

Change password for admin user

It is possible to change the password only; per default it is 'admin'. Press the **admin** entry in the left column to change password; see illustration above.

nttps:/	/beowor	ld.org
---------	---------	--------

Users - new user						
	Adding a new user, press the + in the Users + .	Project Setup Zones Sys	tems Resources Macros Interfa	ces Tools -	Configuration -	Help
User properties		Control interfaces	User properties			Remove user
	Configure the User properties by entering a name in the Name field and password in the Password field and select options according to the	Users admin Users User1 B&O Products Floor 1/Cinema/Avant 75 Floor 1/Cinema/Avant 75 Floor 1/Living Room/BeoSound Moment		ame New user >	K	
	following: - User management access:	Floor 1/Living Room/Beo/Nson 11-55 Floor 2/Sleeping Room/BeoPlay V1-32 Cameras + Floor 1/Cinema/New camera	Pass	word	Change password	
	when selected, the user is	Zones setup Floor 1/Cinema Floor 1/Kitchen	Select zone access for user			
	user-rights. This option should be	Floor 1/LVving Koom Floor 2/Bath Room Floor 2/Child room Floor 2/Sleeping Room		All zone access		
	installation or a 'superuser' who	Favountes Lists		Elenr 1/Cinema		

- 🗹 Controller: should normally be selected. Allows the user to access BeoLink Gateway via mobile devices (BeoLink App). When disabled, the only access is via the Webpanel.

Select zone access for user

- Finally choices should be made for **Select zone access for user**:

There can be selected All zone access or individual zones from the list presented. Changes can be made later.

BANG & OLUFSEN

For A/V products there are som basic options and a source list that can be presented to the us

Select a product in the left column.

NetworkLink product: area/zone/product

- In the NetworkLink product: area/zone/product display-pa the following meta-data are shown: (With Master Link products:

NetworkLink is replaced by MasterLink in the above heading).

- Name: Possible to rename the product.
- Address: The serial number of the product.
- MLN: An unique integer in the range 1 to 240. Used by the BeoLink App and external

BeoLink Gateway v1.1.0.18251

controllers to identify the B&O products on the BeoLink Gateway.

Beo4 remote control

- $\sqrt{3}$ Beo4 navigation button: With $\sqrt{3}$ = Beo4 type 171x and $\sqrt{3}$ = Beo4 type 162x by which the product is operated.

Product sources

For each product sources can be added, when relevant. By this the connected sources are made available to the user. For local and distributed sources on Network Link products it can be queried directly from the product by pressing the Synchronize sources with product button.

The information provided in the **Product source** display-part for each source is the following:

- Source: Actual button to press (IR command) for selecting the source. Note: Source texts/names varies depending on the remote control used. Beo4 sources are in the top part of the list, and scroll down the list to finde BeoRemote One texts/names.

Users	+		Name	Avant 75					
admin O									
New user			Address	12345678					
DSGF1									
Door 1/Cinema/August 75			1.0.1	4					
Floor 1/Kitchen/BS 5 BM5			MUN	1					
Floor 1/Living Room/BeoSound Moment									
Floor 1/Living Room/BeoVision 11-55				Beo4 navigation button					
Floor 2/Sleeping Room/BeoPlay V1-32									
Cameras	+								
Floor 1/Cinema/New camera									
Floor 1/Cinema/New camera Zones setup		21					Synchron	ize sources with	n nrodu
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema	Product sources	s					Synchron	ize sources with	n produc
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Kitchen	Product sources	s			1.000		Synchron	ize sources with	n produc
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Kichen Floor 1/Living Room	Product source	s	Name	Dst	Link	UI Type	Synchron	ize sources with Favourites	n produc
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Kitchen Floor 1/Living Room Floor 2/Bath Room	Product source:	s	Name	Dat	Link	UI Type	Synchron	ize sources with Favourites	n produc
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Kitchen Floor 1/Living Room Floor 2/Bath Room Floor 2/Child room Floor 2/Child room	Product sources	s	Name	Dst [Auto]	Link	UI Type DVD gen	Synchron eric 🔽	Favourites	n produc
Floo: 1/Cinema/New camera Zones setup Floo: 1/Cinema Floo: 1/Cinema Floo: 1/Citchen Floo: 2/Bath Room Floo: 2/Bath Room Floo: 2/Steeping Room ababiliohed	Product source Source	s	Name	Dst [Auto]	Link	UI Type DVD gen	Synchron eric 🔽	Eavourites	n produc
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Cinema Floor 2/Dath Room Floor 2/Dath Room Floor 2/Dath Room Floor 2/Steeping Room globaliglobal Envantes Liste	Product sources	s	Name	Det [Auto]	Link	UI Type DVD gen	Synchron eric 💌	Favourites	n produc
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Kitchen Floor 1/Kitchen Floor 2/Bath Room Floor 2/Child Room Floor 2/Child Room Global/global Floor 2/Steping Room global/global Favourites Lists Boxer	Product source Source DVD TV	s V	Name Name	Dst [Auto]	Link	UI Type DVD gen DTV	Synchron eric 🔽	Favourites	n produc ×
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Citchen Floor 1/Citchen Floor 2/Citta Room Floor 2/Child room Floor 2/Steeping Room global/global Favountas Lists Boxor Nettik	Product source Source DVD TV	s V	Name Name Name	Dst [Auto]	Link	UI Type DVD gen DTV	Synchron eric 💌	Favourites None	n produc ×
Floor 1/Cinema/New camera Zones setup Floor 1/Cinema Floor 1/Cinema Floor 1/Citchen Floor 2/Bath Room Floor 2/Bath Room Floor 2/Sileoping Room global/global Favountes Lists Boxor	Product source Source DVD TV	s V	Name Name Name	Dst [Auto]	Link	UI Type DVD gen DTV	Synchron eric 💌	Favourites	n prod

- Name: Optional label to show with the source. Max. 5 to 6 characters. Entering such optional label will replace the default source name. It is recommended to leave this field empty unless a specific description for this source is required (e.g. manufacturer name of set-top box or DTV service).
- **Dst**: Equivalent to the A/V button on Beo4, or the Destination field for BeoLink commands in macros. AUTO can be selected to retrieve the default setting for the source type. The setting can be modified if needed.
- Link:
 - With ML products:

If a link product has local sources, then a source with the same name from the Audio/Video masters are selected using the LINK Modifier. Also necessary for products in OPTION 4. Some BeoLink products do not support the modifier.

With NL products:

The LINK modifier checkbox should be checked $\boxed{\sqrt{}}$, if the source is a 'Network source'.

- **UI type**: Indication to the mobile application on what type of user interface is needed for operating the product. The type that suits the specific source best should be chosen.

CD cover browsing from BeoMaster 5 requires UI type set to: N.MUSIC.

- Favourite lists require: RADIO, N.RADIO, TV pr DTV.
- Favourites list: This makes it possible to select a favourite list defined in the Favourites section.

When all settings are made press the Add button and the product will be saved into the list of product sources.

Pressing the \times button will remove the source from the list.

HDMI matrix support

The BeoLink Gateway supports unconventional source selection commands where source selection is a sequence of more than one command. This applies when e.g. an Atlona matrix is used for video distribution.

Up to 32 HDMI matrix sources can be selected on the source drop-down menu.

The input format for the matrix controlled sources depends on the TV type and type of remote control as follows:

- Beo4 and Beo5:
 - ML TV: Matrix input 00 to 09 and 10 to 32
 - NL TV: Matrix input 1 to 9 and 10 to 32
- BeoRemote One:
 - Matrix input 1 to 9 and 10 to 16

Note! The mobile applications do not support source selection sequences other than matrix selection.

	In this section the configuration					11-20
	for several network campras can	Project Setup Zones Sys	tems Resources Macros interfaces	Tools -	Configuration +	He
	he added	0	Camera access			Re
	Adding a camoral pross the + in	Control Interfaces				
	the Comerce	Users +	Name	New camera		
		admin O	Zone	Floor 1/Cinema		
Remove a camera		User1 B&O Products	i. orr.	The Point a		
	If a camera is to be removed	Floor 1/Cinema/Avant 75 Floor 1/Kitchen/BS 5 BM5	Base URL	192.168.1.27:80		
	from the list, choose the camera	Floor 1/Living Room/BeoSound Moment Floor 1/Living Room/BeoVision 11-55	Username	admin		
	in the left column and press the	Floor 2/Sleeping Room/BeoPlay V1-32 Cameras				
	Remove button.	Floor 1/Cinema/New camera	Password	admin		
_		Zones setup				
Camera access		Floor 1/Cinema Floor 1/Kitchen				Des
	Fill in data as follows:	Floor 1/Living Room Floor 2/Bath Room	Camera resources path			Ra
	- The Name field is filled in with a	Floor 2/Child room Floor 2/Sleeping Room	Video & Images			
	name that identifies the camera.	global/global	High resolution image	limade/ineg.cdi		
	The name will be shown in the	Boxer	rightesotator mage	Amage/peg.og		
	user interfaces.	ЗКУ	Low resolution image	/image/jpeg.cgi		
	- In the drop down list for Zone ,		High resolution miner	(miner co)		
	select the zone in which the		rightesolution hipeg	milledra		
	camera is placed.		Low resolution mipeg	/mjpeg.cgi		
	- A Base URL (that is the URL +					
	port No to get in contact to the		Pan commands			
	camera) to which all commands		Home path			
	will be appended must be		Pan left noth			
	provided The format may yary of	a http://102 168 1 27.80				
	The entire of Lleen nerves and Dec	y. http://192.108.1.57.80.				
	- The optional User name and Pass	sword lields may be used to	r basic HTTP authentication to a	access the camera from the	user interfaces.	
Camera resources path						
	Commands for obtaining Video 8	k Images both in high and lo	w resolution must be provided	, e.g. mjpg/video.cgi for hig	gh resolution video	Э.
	All the commands will be appende	ed to the base URL.			5	
	Note: The two top lines regards in	hages and the two lower line	es regards video streaming			
	All four lines must be filled in for y	video streaming	s regards thee streaming.			
	All four lines must be filled iff for	naco sucurning.				
	See tip in ReoWise > Link > Real	Link > Pool ink Catework				
	See up in Beovvise > Link > Beol	LINK > BEOLINK GaleWay >	TIPS > Supported in cameras			
	See tip in BeoWise > Link > Beol Note: The BeoLink Gateway is not	Link > BeoLink Gateway > supporting the H.264 forma	TIPS > Supported IP cameras at in cameras.			

Optional commands can be stated to control the camera if supported: **Pan commands**, **Tilt commands**, and **Zoom commands**. Note! Some browsers will not be able to work with HTTP authentication.

By pressing the Raw edit button a text representation of all the fields appears for setting camera resolutions and commands. It is possible to copy/ paste, edit in the favourite text editor.

It is possible to copy and paste the text when setting up other similar cameras and for each of these to adapt to the actual camera, e.g. adjust to the correct IP-address.

System connection status: BeoLink KNX - EIB

BANG & OLUFSEN

Zone setup

In this section of the Interfaces page, for each zone it is possible to reorder, rename, and hide/ show the resources as they will be shown in the user interfaces.

Resources for area/zone

- (Reorder): For the resource to be moved in the list, place the cursor over the button, then click and hold the left-mouse button and then drag the resource until the line-marking is where the resource should be paced in order and let go the mouse button.
- Name: Possibility to rename the resource
- **Type**: The type of the resource is stated.

Control interfaces	Res	ources for Floor 1/Cinema			
leave at		Name	Туре	Hidden	Options / Hints
sderin O Vew user Sser1	÷	Avant 75	AV renderer (NetworkLink product)		
B&D Products Floor 1/Cinema/Avant 75 Floor 1/Kitchen/BS 5 BM5 Floor 1/Living Room/BeoSound Moment Floor 1/Living Room/Beo/Vision 11-55	Ξ	Cinema Scene	BUTTON (Virtual Button)		Confirm Compact On camera view
Floor 2/Sleeping Room/BeoPlay V1-32 Cameras Floor 1/Cinema/New camera Cones setup	Ξ	Cinema Scene	MACRO	N	Confirm Compact Compa
Cori // Cinema Cori // Kitchen Cori // Kitchen Cori // Kitchen Cori // Living Room Cori // Cinema Cori // Cinema Cori // Cinema Cori // Cinema Room Cori // Cinema Room	ŧ	Cinema Scene wall button	BUTTON (Button)		Confirm Compact On camera view
global/global Favourites Lists	Ξ	Set Cinema Scene	_KNX_GROUP_ADDRESS (Boolean)		

- **Hidden**: $\sqrt{}$ = Hidden and $\boxed{}$ = Shown in user interface.

- **Options / Hints**: For macros and buttons that are visible on the user interfaces the following options are available:

BeoLink Gateway vt.1 0 18251

- **Confirm**: When a checkmark is set in the checkbox and when a button pressed or a macro is triggered the action needs confirmation on a hand held device, e.g. pressing a Yes button to avoid unintended activation before the desired function is executed. This could be when an action should not take place unintended, e.g. activating 'Vacation mode'.
- Compact: When enabled a the button in the user interface will be shown in a half-width button. I.e. there is room for two buttons per line.
- On camera view: With 'On camera' enabled the half-width button will be shown next to the IP camera images in that zone on the user interface.

Favourites Lists

In this section of the Interfaces page favourite lists for TV channels as well as radio stations can be added. In the hand held devices the favourite channels/ stations are listed by name and logo if such is selected.

Adding a new favourites list, press the + in the Favourites Lists +. In the field in the top left of the display, enter the name of the source provide The Clone button (top right) is used to clone an existing source provider of favourites. An new one will show in the left column list - adding 'Clone of' to the name.

The **Remove** button is used to remove a source provider of favourites chosen in the left column.

Commands	global	options	

For each favourite list a global End command and a global Delay - that will affect each favourite command - can be set.

- End command: The end command is added at the end of each favourite command sequence and can be either NONE, PLAY or SELECT.
- Delay: The global delay is a delay value added between all digits and between digits and the end command for each favourite command.

List of favourites

For each listed TV channel/radio station the following information should be provided:

- Caption: A short description for the favourite. The caption will be filled in automatically when the logo picker is used. If edited it will remain unmodified. The caption will appear in the user interface.

Control interfa	aces	Bo	Ker				Clone
1000		Co	mmands global optic	ons			
Josets admin	- T						
New user				End command	PLAY	v	
User1				End command	r wat		
B&O Products				1223455	Treasure	1000	
Floor 1/Cinema/Avant 75				Delay	150ms	~	
Floor 1/Kitchen/BS 5 BM5	und Momont						
Floor 1/Living Room/BeoVis	sion 11-55						
Floor 2/Sleeping Room/Beo	Play V1-32						
Cameras	+	Lis	t of favourites				
Floor 1/Cinema/New camer	2		1000000			1000	
Zones setup			Caption	Comm	and	Logo	URL
Floor 1/Cinema							
Floor 1/Living Room		=	DR1	1			http://mlgw.bang-olufsen.dk/Be
Floor 2/Bath Room							
Floor 2/Child room						3	r
Floor 2/Steeping Room		=	TV2 Danmark	5			http://mlgw.bang-olufsen.dk/Be
Eevountes Lists	+						
Boxer							
Sky		=	TV2 MidtVest				http://migw.bang-olufsen.dk/Be
							har and the second s
						10	

BANG & OLUFSEN

- **Command**: The command that is executed when a logo is selected in the BeoLink App. See in Help for full explanation of combining elements in the command string. The command must be filled in manually.
- Logo: A logo can be fetched using the logopicker, see below, or by entering sufficient information in the URL field for the favourite. The logo will be shown in the user interfaces.
- URL: The full URL of the logo image to show. The URL must point out the valid image as it will be used periodically by the mobile application to retrieve the logo. The URL will be filled in automatically when the logo picker is used. The URL can be entered manually.

Logo picker

Note! The logo picker only works when an Internet connection is available. Press on a logo field.

The logo picker shows a pop-up window for selecting logos from the B&O repository, and shows up by clicking the logo. Available logos are shown in groups of 50. It is possible to search for a channel using the filter. A search string will immediately restrict the channels displayed to only the matching entries.

When a logo has been chosen the picker window will close and complete the URL path and command fields, and show the selected logo. The caption will also be updated, but not if it has been edited explicitly.

BANG & OLUFSEN

Tools

To access the Tool menus	Project	Setup	Zones	Systems	Resources	Macros	Interfaces	Tools / Monitor -	Configuration +	Help
select 'Tools' in the menu bar. A drop-down box with the sub-menus will appear, and any of the sub-menus can be								Monitor Log Service reports Firmware Logout (admin)		
accessed.	BeoLink Ga	steway v1.1	0.18251						System connection status BeoLink	KNX - EIB

Monitor

The 'Monitor Menu' shows a list of the 100 latest actions which have occurred - events, macros and commands.

The menu can be used for the following:

- To find the precise addressing of a specific component.

Configuration -Project Setup Zones Systems Resources Macros Interfaces Tools / Monitor Help Monitoring Fitter 15-02-25 10:54:02 Event fired global/global/SYSTEM/KNX - EIB/STATE_UPDATE?CONNECTION=Error Show Macro Event Command Other 15-02-25 10:54:02 Event fired global/global/SYSTEM/KNX - EIB/STATE_UPDATE?CONNECTION=Synchronizing space stop flow | escape clear screen BeoLink Gateway v1.1.0.18251 System connection status BeoLink KNX - EIB

If a keypad, a sensor, etc. is pressed on the Home Automation System, the event generated will be monitored by the tool.

- To check whether macros and the belonging commands are working as intended.

Note: The four 'show' buttons are per default active and can be deselected individually to specify the filtering.

Log

The 'System Log Menu' is able to show system messages concerning the interaction between the BeoLink Gateway and external devices connected, such as application errors and critical system errors.

The log menu can be used to:

- Verify the connection to external devices. Errors will be shown.
- Check of incoming BeoLink Gateway protocol connections.

The size of the system log is limited, which means that old messages will be deleted when new messages appear.

Note: The length of the log is limited to 10.000 lines, and when full, the oldest will disappear first.

5	Filler
Fed (d) 1030 15 (debug) server. KNX - EIB (2005), Try to query address. 0/2/1 Feb 21 33: 42 (debug) server. KNX - EIB (2005), Try to query address. 0/2/1 Feb 21 33: 47 (5 (debug) server. KNY - EIB (2005), Try to query address. 0/2/1 Feb 21 33: 46 (debug) server. KNY - GeEtxtenahlygServer Feb 25 13: 48: 04 (debug) server. KNY - BeE (2006), Try to query address. 0/2/1 Feb 25 13: 48: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 48: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 04 (debug) server. KNX - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 05 (debug) server. KNY - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 05 (debug) server. KNY - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 49: 05 (debug) server. KNY - EIB (2006), Try to query address. 0/2/1 Feb 25 13: 05: 07 (debug) server. KNY - EIB (2007), Try to query address. 0/2/1 Feb 25 13: 05: 07 (debug) server. KNY - EIB (2007), Try to query address. 0/2/1 Feb 25 13: 05: 07 (debug) server. KNY - EIB (2007), Try to query address. 0/2/1 Feb 25 13: 05: 07 (debug) server. KNY - EIB (2007), Try to query address. 0/2/1 Feb 25: 13: 05: 06: 06: 08: 07: 07: 07: 06: 05: 06: 06: 07: 06: 05: 06: 07: 06: 07: 06: 07: 06: 06: 06: 06: 07: 06: 06: 06: 06: 06: 06: 06: 06: 06: 06	Applied from 1 (2010) a start our reserv
Mar 2 12 54:06 [debug] server: KNX - EIB (2608) Try to query address: 0/2/1	

Service Reports

If a hardware or software error is experienced it is possible to create a service report using this four step easy- to-use report tool. Follow the instructions:

- 1 If possible reproduce the problem experienced else go to next step.
- 2 Press the Download service report button.
- 3 Copy the entire text in the text-box in the step 3 instruction and copy into an e-mail. Fill in the individual lines re. product and set-up information. Also observations about the experienced problem may be added.

Copy the downloaded service report from step 2 into the e-mail as an attached file.

4 When the e-mail is completed, send it to the e-mail-address stated in the step 4 instruction:



productsupport@bang-olufsen.dk.

Firmware			
	This menu is for updating software . There are three ways to	Project Setup Zones Systems Resources Macros Interfaces Tools / Firmware -	Configuration + Help
	 update software: Manually via computer. Online updating via the Internet. Via the ServiceTool. 	Menual update Upgrade from file: Browse	
Manual update		Online update Press button below to check for latest version.	
	 Press the Choose file and browse to the file on the computer and open this, by which it will automatically be downloaded to the BeoLink 	Check for latest version Start online update BeoLink Geteway v1.1.0.18251	System connection status: BeoLink KNX - EIB
	Gateway and it takes effect immediately.		
Online update			
	 Ensure the router used with th Press the Check for lastes version b Press the Start online update and 	e BeoLink Gateway is connected to the Internet. outton and the latest official SW will be displayed. the displayed SW version will be downloaded to the BeoLink Gateway and it takes ef	fect immediately.
ServiceTool			
	Connect the BeoLink Gateway	to the ServicTool computer and follow instructions in the ServiceTool; page 17.	
Logout (admin)	By pressing the menu-point in	the Tools drop down menu list with the title Logout (admin), the administrator will l	be logged out!

Configuration				
	To access the Configuration	Project Setup Zones Systems Resource	es Macros Interfaces Tools -	Configuration - Help
	tools select 'Configuration' in			Save revision
	the menu bar. A drop-down			Load from file
	list with the sub-menus will			Download to file
	appear, and any of the sub-			Revision history
	menus can be accessed.			
		BeoLink Gateway v1 1.0.18251		System connection status: BeoLink KNX - EIB
Save revision				
	Saving a revision means	Project Setup Zones Systems Resourc	es Macros Interfaces Tools / Firmware -	Configuration - Help
	saving the current			
	configuration internally in the	Descripti	ion: Save Cance	×
	BeoLink Gateway.			
	In the Description entry			
	field, at tag can be entered,	Beol ink Gateway vt 1 0 18251		System connection status: BeoLink KNX - EIB
	which will be added to a			
	revision label having the file-nar	ne with the following syntax:		
	rnn I Jan 25, 2015 08:55:37 PM	l <tag>.</tag>		
	where n is a revision number			
	Such savings are useful when ch	hanges have been made to the configur	ation. The saved revision is available in t	he Revision history list where it is
	placed in the bottom of the list	(see page 57) and from where it can be	e restored	
	The current configuration is say	ed internally in the Beol ink Gateway wh	pen the Save button is pressed. By this :	the recent autosaved file (see below)
	will be discarded	ed internally in the beolink Gateway wi	button is pressed. By this t	the recent autosaved life (see below)
	will be discarded.			
	Up to ten revisions of the config	juration can be saved.		
	If a manually Save revision is n	ot made the recent autosaved file will b	e the recent saved configuration.	
Autosave				
	When configuration of the Beol	Link Gateway takes place and the opera	tor has not saved the configuration by a	a manual Save revision action, the
	configuration will be saved ever	y 5 th minute if configuration activities ar	e ongoing - since last time autosave too	ok place.
	If configurations are made and l	eft unsaved and the BeoLink Gateway is	s idle for more than 30 seconds, autosa	ve will also take place.
	These files are added to the Rev	ision history list and marked with the ta	g: 'Auto save'; see page 57.	
	When the autosaved configurat	ion is newer than the manually made Sa	ave revision and in case power is failing	g or any other malfunctioning of the
	system occurs, the BeoLink Gate	eway will - when restarted - get use of t	he autosaved configuration file.	, ,
		- 5	5	

Load from file



configuration file can be

uploaded into the BeoLink Gateway. The uploaded configuration will become active immediately and substitute the current configuration.



BANG & OLUFSEN

Download to file

Used to save revision of the configuration to a computer.

By selecting **Configuration** > **Download to file** the current configuration will be downloaded to a computer.

It is recommended to use this method to take a copy of the configuration on a computer or save to another storage media when an installation is finished.

It can be useful to have such a configuration file as a reference if a problem should occur or as a back-up if the BeoLink Gateway should be defective.

Revision history

The BeoLink Gateway keeps	Project Setup Zones	Systems Resources	Macros Interfaces Tools -		Configuration -	Help
a record of the latest ten				S	ave revision	1
configuration revisions.				Le	oad from file	
A new revision can be saved				D	ownload to file	
and marked with relevant			LOAD PREVIOUS REVISIO	ns R	evision history 🔸	
tag information by selecting			r84 Oct 27, 2010 4:1	19:36 PM tredje		1
Configuration > Save			r85 Oct 27, 2010 4 1	19:44 PM quatro		
revision; see page 54.			r86 Oct 27, 2010 4 2	20:00 PM stjerne		
Autosaved configurations			r90 Oct 27, 2010 4 3	31:18 PM 8		
			r91 Oct 27, 2010 4.3	32:05 PM nine		
are listed in the Revision	BeoLink Gateway v1.1.0.18251		r92 Oct 27, 2010 4:3	32:51 PM 10 conne	action status: BeoLin	IK KNX-EB
history and is marked with			r93 Oct 27, 2010 4 3	33:05 PM næste		
the tag: 'Auto save'			r105 Oct 28, 2010 1	0:36:06 AM ChannelChoice		
the tay. Auto save .			r145 Feb 25, 2015 9	41:11 AM KNX addr		
			r160 Feb 27, 2015 1	0:29:04 AM Auto save		

Reloading a saved revision

To access any of the ten

saved revisions or the auto-save configuration select **Configuration** > **Revision history** and choose the saved revision desired. When selected the file will be copied into the current configuration. It will become active immediately and it will be saved as a new auto-save configuration.

Connection specifications		
Mains inlet	S8 socket: To see the different types of mains leads, Live Neutral	see exploded view in the Retail Ordering System
Network Link - Ethernet 10/100 Mbit/s	RJ45 socket, IEEE 802.3-2008; IEEE 802.3-2008Pin 1TD+/RD+Pin 2TD-/RD-Pin 3RD+/TD+Pin 4TerminatePin 5TerminatePin 6RD-/TD-Pin 7TerminatePin 8TerminateShieldGND	Data GND 12345678 (chassis)
USB (RS232)	USB A (2.0) +5 VDC ±5%, 0 to 500 mA; used for USB Pin 1 +5 V (V Bus) Pin 2 Data – Pin 3 Data + Pin 4 GND Shield GND	RS232 adapter cable
MASTER LINK – RJ45	RJ45 socketPin 1Data - $-0.4V \pm 0.1V$ Pin 2Data + $+0.4V \pm 0.1V$ Pin 3- Supply voltage -7V to -15V (in St By -3V to -15V)Pin 4Looped to MASTERLINK - MLPin 5Looped to MASTERLINK - MLPin 6+ Supply voltage +7V to +15V (in St By +3V to +15V)Pin 7Looped to MASTERLINK - MLPin 8Looped to MASTERLINK - MLPin 8Looped to MASTERLINK - MLShieldData GND	Data GND 12345678 (chassis)

MASTER LINK – ML

ML socket

Pin 1	Data – –0.4V ±0.1V		٦
Pin 2	Data + +0.4V ±0.1V	01 -	
Pin 3	N.C.	03 -	+
Pin 4	N.C.	04 -	1
Pin 5	NC	06 -	
Pin 6	NC	07 -	+
Din 7	N.C.	08 -	1
	N.C.	010 -	4
Pin 8	N.C.	011-	+
Pin 9	N.C.	012 -	+
Pin 10	N.C.	013 -	1
Pin 11	- Supply voltage $-7V$ to $-15V$ (in St By $-3V$ to $-15V$)	015 -	+
Pin 12	+ Supply voltage +7V to +15V (in St By +3V to +15V)	016 -	
Pin 13	Looped to MASTERLINK - RJ45		
Pin 14	Looped to MASTERLINK - RJ45		
Pin 15	Looped to MASTERLINK - RJ45		
Pin 16	Looped to MASTERLINK - RJ45		

Shield Data GND

BANG & OLUFSEN

Index

А

Accessing	
- BeoLink Gateway	19
- directly	19
- in DHCP mode	19
- in static IP address mode	19
Accessing the web interface	20
Actions on macros	37
Add command	
- macro	34
- macro Area	34 5
- macro Area - definition	34 5 5
- macro Area - definition Areas	34 5 5
- macro Area - definition Areas - adding	34 5 5
- macro Area - definition Areas - adding Area/zone	34 5 5 26 5
- macro Area - definition Areas - adding Area/zone Astronomical Clock	34 5 26 5 5

В

Beo442
BeoLink system
- definition6
B&O products
- interfaces42

С

Cable connections18	
Cameras45	
Capture	
- events/macros34	
- ressources	
Colours	

Command

- definition	8
- Generic Resource	39
Concept	4
Configuration	54
- Download to file	56
- Load from file	55
- Revision history	57
- save revision	54
Connection panel	11
Connection specifications	58
Connections types	13
Contact information	
- installer	5

D

Date & Time23	8
- synchronize from internet23	2
DHCP	2
Download to file	
- configuration56	5
Dynamic IP-address12	2

Е

Ethernet	13
Event	
- definition	. 8
- Generic Ressource	38

F

Factory default	12
Favourites Lists	48
Firmware	53
First time login	20
Fixed IP-address	12
Forgotten	
- IP address	19

Functions	
- by Setup button	12

G

Generic Resource Command3	9
Generic Resource Event3	8
Global area2	7
- definition	5
Global' area2	7
'global' area/'global'	5
Global zone2	7
- definition	5

Н

HDMI matrix support44	4
Home Automation systems	
- definition	6
- systems supported1	6
Hostname2	2

Icon	27
- status colours	
Installer	5
Integration Protocol	24
- over ethernet	24
- over RS232	25
Interfaces	40
- B&O products	42
- Cameras	45
- definition	9
- Favourites Lists	
- Zone setup	
IP address	
- forgotten	
IP-address	
- by DHCP	

- dynamic12
- fixed12
1
LED
- indications12
Load from file
- configuration55
Location settings23
Log51
Login20
Logo
- radio stations49
- TV channels49
Logo picker49
Logout53

Μ

Macro	
- Actions	37
- Add command	34
- considerations	37
- definition	8
- Resource Command	36
- Resource Event	35
Macros	33
Mains socket	11
Master Link	
- connection	11
Matrix support	44
Monitor	50
Mounting	
- rack	14
- shelf	15
- wall	15

BANG & OLUFSEN

Network Link

INCLIVOIR LINK	
- connection	11
Network settings	22
New user	41

0

One remote	4
One touch	4
Orphan commands and events	37

P

Password	
- change	40
- reset to default	12
Product sources	42
Project	5 , 21

R

Reset password to default	.12	
Resource Command	.36	
Resource Event	.35	
Resources		
- BeoLink	.30	
Ressource		
- definition	7	
Ressources		
- Home Automation System	.31	
- Virtual resources	.32	
Revision history	. 57	
RS2321		

S

Service Report	52
ServiceTool	17
SETUP	20

Setup	22
- Date & Time	23
- Integration Protocol	24
- Network	22
Setup button	11
- Functions	
Set up the BeoLink Gateway	21
Shelf placement	
Software	53
Source	
- products	
Sources	
- via matrix	
Status colours	
- icons	
Synchronize from internet	
- date & time	23
System	
- definition	6
- icons	
Systems	

Т

TCP port24	4
Tools50	0
- Firmware5	3
- Log5	1
- Logout5	3
- Monitor50	0
- Service Report52	2
- Software5	3
Types of connections1	3

U

USB (RS232)

- connection11

USB/RS23213
User Interfaces
- definition9
Users - admin40
Users - new user41

V

Virtual Ressource
- definition7
Virtual Ressource systems
- definition6

W

Wall mount	ing	15
Webpanel .		20

Ζ

Zone5
- definition5
- icon27
Zones
- adding26
Zone setup47

BANG & OLUFSEN

Table of Contents

Introduction	2
How to use this installation guide	3
Concept	4
Terminology	5
Connection panel	11
LED indications	12
Installation overview	13
Mounting	14
Home Automation systems supported - connection types	16
ServiceTool	17
Cable connections	18
Accessing the BeoLink Gateway	19
Set up the BeoLink Gateway	21
Connection specifications	58
Index	60
Table of Contents	62

Introduction
How to use this installation guide
Concept
Terminology
Connection panel
LED indications
Installation overview
Mounting
Home Automation systems supported - connection types
ServiceTool
Cable connections
Accessing the BeoLink Gateway
Setup of BeoLink Gateway
Connection specifications
Index