HOW TO CONVERT BEOPLAY AIRPLAY SPEAKERS TO B&O LINK SPEAKERS
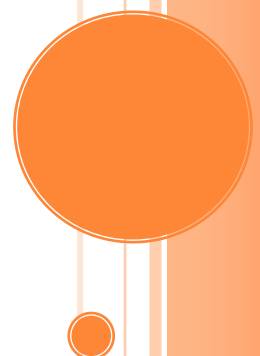
BeoPlay Airplay is very powerful – but BeoLink is more comfortable

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HOW TO CONVERT BEOPLAY AIRPLAY SPEAKERS TO B&O LINK SPEAKERS

BeoPlay Airplay is very powerful – but BeoLink is more comfortable

B&O offers currently only BeoLab 3500, which offers very easy to use integration into master link music systems. The newer BeoPlay Airplay speakers offer more powerful features, but cannot be connected to master link. Furthermore you need an iDevice to control the speakers. Integration into an existing BeoMedia1/BeoMaster5 solution integrated with a N.Music capable music system, controlled by Beo4/5/6 is not possible.

Why you want to use BeoPlay speakers as BeoLink Speakers

When I first heard the BeoPlay A9 speaker a thought came to my mind: This speaker outperforms my BeoLab 3500 by far. But how do I integrate to replace my BeoLab 3500. Whenever I use my BeoLab 3500 I do not want to use two controllers: Beo4 to startup the A9 and an iDevice to get music play, as all my music is stored on a central library.

Using my BeoLab 3500 I start playing music simply by pressing one button on my Beo4. That's the way it has to work.

BeoPlay can be controlled by Beo4/5/6

BeoPlay Airplay speaker offer to option to be remote controlled by B&O remote controllers Beo4/5/6, but lack a ML connector. The information can be found is the FAQ section of the BeoPlay web site. This feature is absolutely necessary, but not sufficient to integrate with ML. Additional components are needed. The next chapter will explain in detail.

THE CONCEPT

The idea is to use BeoLink video to get the ML integration and simultaneously control the BeoPlay speaker with Beo4/5/6. The BeoPlay speakers have a network link (wired and wifi), usb port and line-in connector. BeoLink Video is available since years to integrate NON-ML capable B&O TV sets into ML networks. It has a ML-Connector and an Audio Aux Link. From Audio Aux Link the ML audio signal is connected to the speaker's line-input.
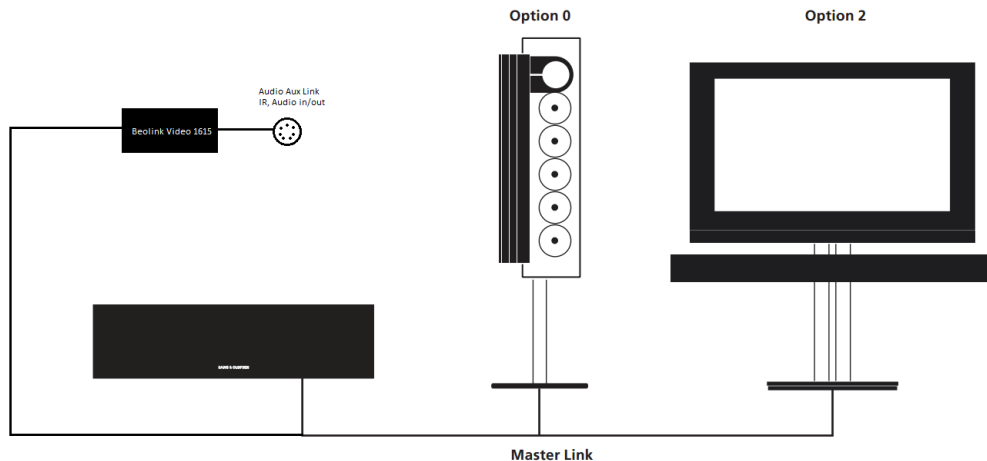
To make the integration shown above work some problems need to be solved:

1. Control BeoPlay speaker's source selection and ML-source activation at a single press of a button
2. How to get IR-input to BeoLink video
3. How to get ML audio signal to BeoPlay speaker
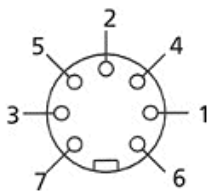
How to select sources on BeoPlay speakers

BeoPlay Airplay speakers can be controlled by Beo4/5/6 and the information can be found in the FAQ section of the BeoPlay support web site. The table below summarizes the information:

AirPlay device	AirPlay (wifi)	iPhone (usb)	MP3 (usb)	Line-In (line-in)	DLNA (wifi)
BeoLit12	A.MEM	CD	Dock/N.Radio	A.AUX	-
BeoPlay A8	A.MEM	CD	USB/N.Music	A.AUX	-
BeoPlay A9	A.MEM	CD	CD	A.AUX	NET
PlayMaker	A.MEM	-	-	A.AUX	-

As you can see in the table above the IR commands B&O uses to control BeoPlay devices are not completely the same for all devices.

How to connect to BeoLink Video

The BeoLink Video converter is used to get the desired link to the ML system. The converter has two connectors. The ML connector is used to connect to the ML system by a standard ML cable connection. The Audio Aux Link connector is a 7 pin DIN connector and used to exchange commands with the ML system and get the audio signal from the ML system. The BeoTech section of the beoworld web site shows the pin layout of the audio aux link connector:


Audio Aux Link	
Pin 1	Left out
Pin 2	GND
Pin 3	Left in
Pin 4	Right out
Pin 5	Right in
Pin 6	Datalink
Pin 7	Not used

http://www.beoworld.org/beotech/misc2.htm#Audio%20Aux%20Link%20/%20PowerLink%20connections

How this connector is used will be shown in the next sections.

How to control sources

To understand how to make ML sources available to the BeoPlay Air Speakers al look to the integration scenario is needed:

IR Command sent out by Beo4/5/6

BeoPlay Speaker
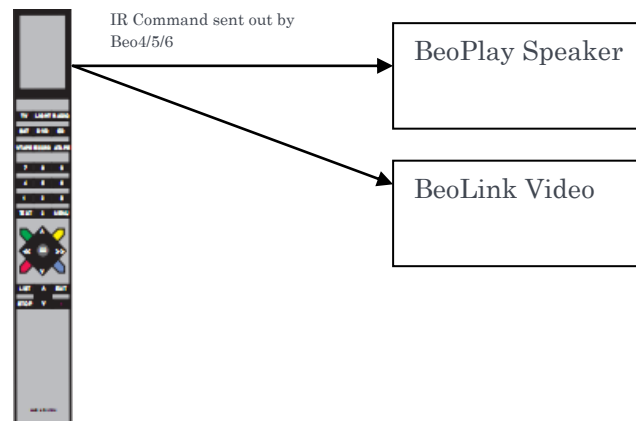
BeoLink Video

When Beo4/5/6 sends out an IR command it is received by two devices - by the BeoPlay speaker and BeoLink Videos IR Receiver (discussed later). B&O used this way to integrate BeoMedia1 with NON PC-capable BeoVision devices.

Having a look at the table of IR-commands available on BeoPlay speakers you can see the line in of the BeoPlay speaker is activated by A.AUX. So with this simple integration you can play your ML system's A.AUX source using the BeoPlay speaker.

Usually B&O A.AUX sources cannot be controlled by Beo4/5/6. So this scenario doesn't seem to be very attractive. This is the reason why it has not been investigated deeper on how to integrate IR input to BeoLink video. So again an additional component seems to be needed to do the job of IR command handling.

## Lintronic TT455-RT-238 handles IR commands

Lintronic offers the TT455-RT-238 box, which is primarily used to integrate non B&O devices based on IR signal conversion. This box offers many other ways to integrate into B&O solutions. Some of these are integration of BeoSystem 3's digital output to be used to control home automation systems and projectors. It can also be used to integrate with B&Os ML-System (http://www.lintronic.dk/AppNote_BeoLink.pdf). Unfortunately there is no standard cable or converter to connect the -238 box to BeoLink Video. A custom made cable has to be made.

PUTTING IT ALL TOGETHER

The Lintronic box will receive the IR commands from Beo4/5/6 and convert them to the proper commands sent to the master link. The ML sound signal will be connected to the line-in connector of the BeoPlay speaker.
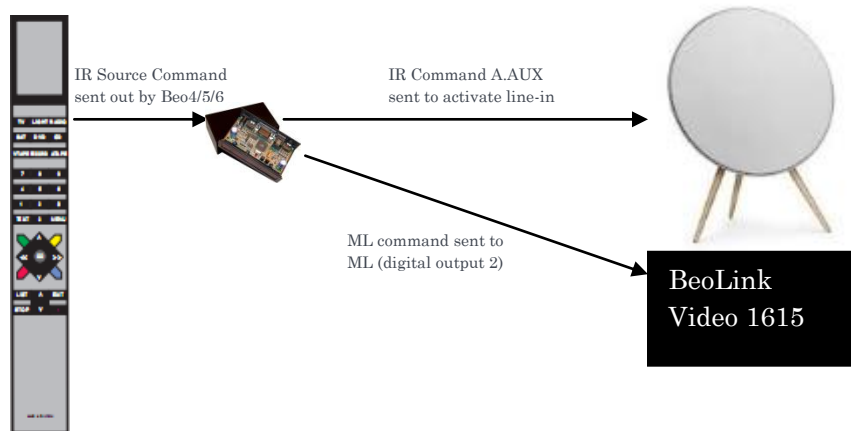
Custom made Audio Aux Link connector

This connector connects the ML sound signal to the line-in connector of the BeoPlay AirPlay speaker. Additionally IR commands will be sent to the ML system via this connector.
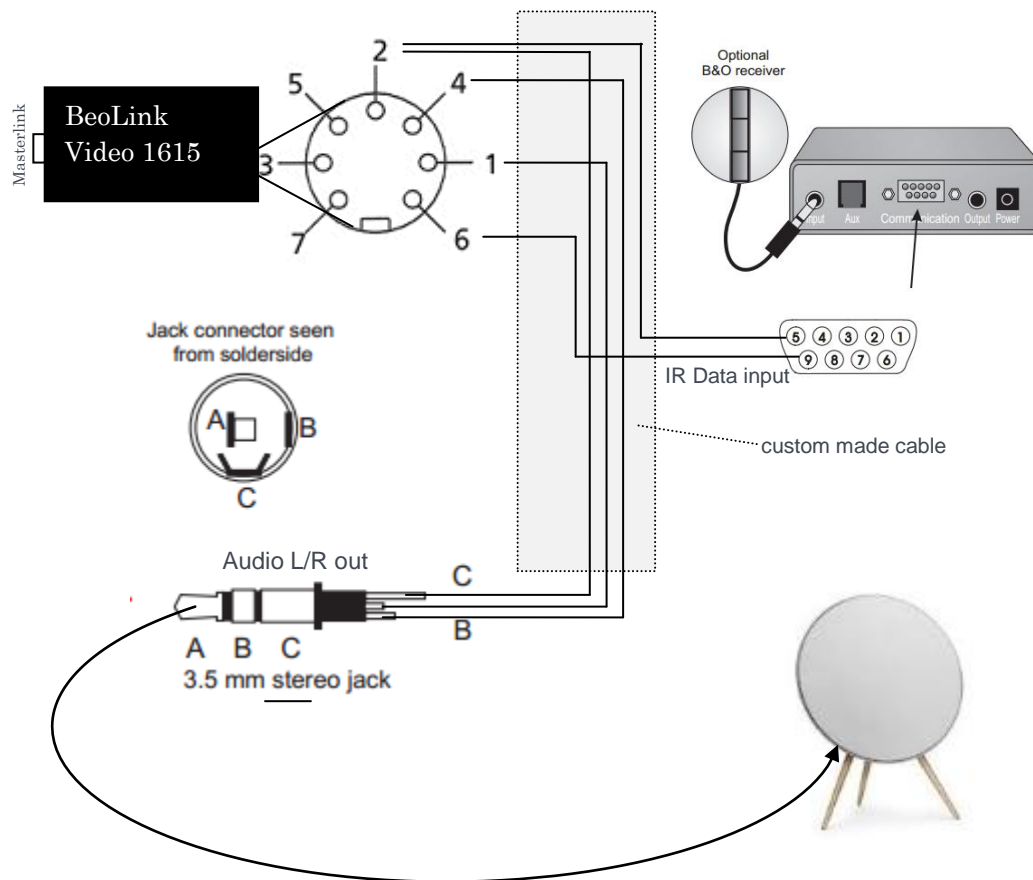
This connector splits the Audio Aux Link 7 pin DIN connector into two connectors. The 3.5 mm standard stereo plug will connect to master link audio signal to the line input of the BeoPlay airplay speaker. The DSUB 9 pin connector connects to the -238 box' serial plug and delivers the IR commands to the master link system.

Integrate ML audio sources

The lintronic -238 box is the controlling the way ML sources are integrated. There are two communication channels:

IR Source Command
sent out by Beo4/5/6

IR Command A.AUX
sent to activate line-in

ML command sent to
ML (digital output 2)

BeoLink
Video 1615

When a source gets activated via Beo4/5/6 the command is received by the -238 box. The memory map is configured to:

1. Sending out IR command A.AUX to activate Line-in of the BeoPlay speaker
2. Sending the desired source command to digital output2

SETTING UP THE MEMORY MAP

The -238 box controls the way it processes received IR signals by a user defined Memory Map. This is done by using a Lintronic supplied Windows based tool. No programming skills are needed to use this tool. With this memory map you have define how your sources are activated and the other keys are passed to ML.

ACTIVATING SOURCES

For every audio source you have in your ML system you enter two triggers into the memory map:

The first uses Beo4 command A.AUX to activate BeoPlay speaker's line-in. The second sends the corresponding Beo4 source command (e.g. CD) to digital output 2. This is done by modifying the default value "000" of par3 to "002". Details can be found in the following document http://www.lintronic.dk/CodeSet_701.pdf.

ADJUSTING THE VOLUME

To adjust the volume of the BeoPlay speaker no action is required. It processes the IR command sent by Beo4/5/6 directly.

SENDING BEO4 KEYS TO ML

All the other keys controlling the playback of the sources have also to be sent to the ML system. This can be done for all sources in one line per key in the memory map. You simply use the "ANY BEO" mode when selecting the trigger. And again you modify par3 to "002".

TERMINATING PLAYBACK

To send the BeoPlay speaker to stand by no action is required. It processes the IR command sent by Beo4/5/6 directly. To terminate the playback of a source you enter a trigger for mode "ANY BEO" into the memory map:

It sends the POWER command to digital output 2 to terminate playback of the ML source. This is done by modifying the default value "000" of par3 to "002".