



Atlona and Bang & Olufsen

**Solutions Guide for Distributing Audio Video Signals
in the Modern Bang & Olufsen Home**

Despite the petite size of a high-rise apartment, condominium, or vacation beach home, there is always the passion for quality tempered with the need for efficient use of audio visual equipment. In this modest residence there are living room, bedroom, and kitchen spaces with similar video needs though different audio needs. However when space is at a premium it's desirable to minimize the clutter of redundant source equipment. Atlona provides routing solutions to maximize both the equipment investment and enjoyment of the Bang & Olufsen experience.



AT-PRO3HD44M

The Equipment Rack holds the key to maximum system utilization. The AT-PRO3HD44M 4x4 matrix switcher accepts full, high definition HDMI signals from a collection of media sources. Only one set of these sources are needed for the residence. Using Atlona's HDBaseT extension technology, each source is made available to each location at the highest resolution.

For the Living Room entertainment space, the BeoVision 11 TV receives audio and video signals from the discreet AT-HDWP-IR HDBaseT to HDMI receiver wall plate which is hidden behind the TV. Multi-channel sound is processed by the TV and carried over Power Link connections to the BeoLab 12 speakers surrounding the listening space.

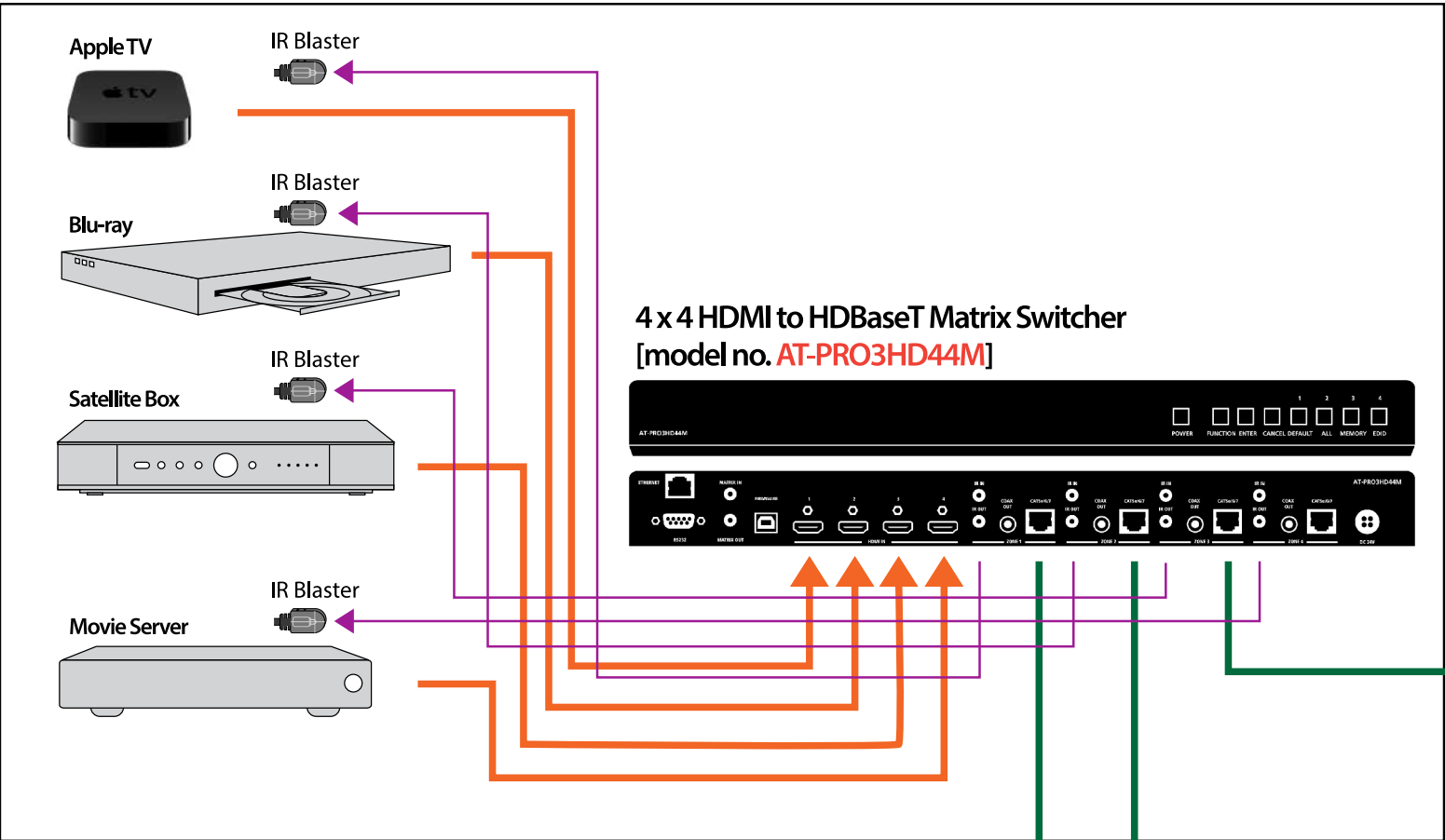
The Bedroom and Kitchen both make efficient use of space with the BeoVision 10 TV which incorporates two-way speaker and bass units. To convert multi-channel audio to two-channel audio for these spaces while preserving multi-channel audio for the Living Room, the AT-HD-M2C audio converter is placed inline between the AT-HDRX-IR HDBaseT extender and the TV.



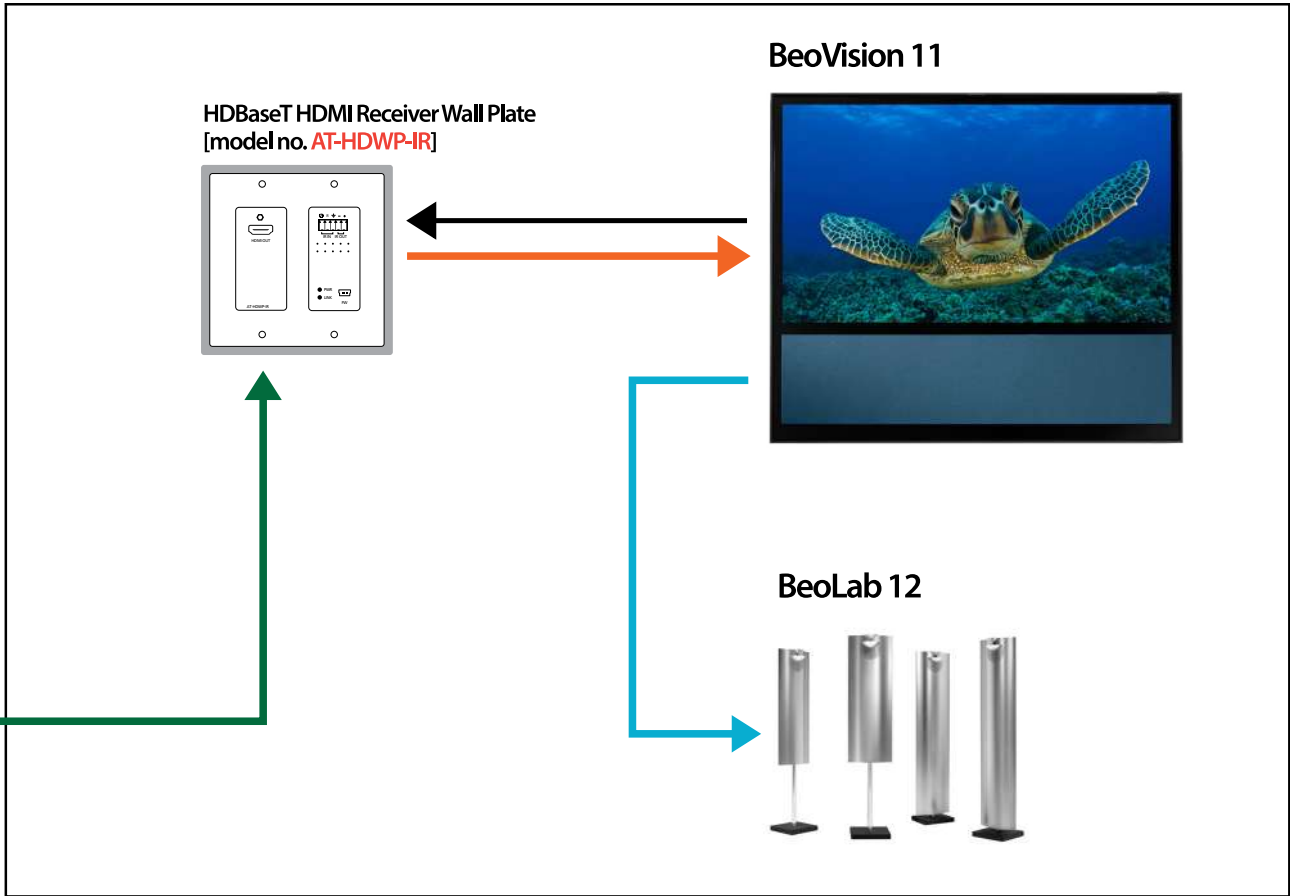
For ease of control, IR signals are routed to the Equipment Rack via the HDBaseT link from each Atlona receiver in the residence. This allows remote controls like the Beo4, BeoRemote One, or BeoLink App to control the displays and source equipment from one convenient, unified remote.

Model	Description	Inputs	Outputs	Benefits
AT-PRO3HD44M	HDMI to HDBaseT™ 4 x 4 Matrix Switcher	4 - HDMI 1 - RS-232 5 - IR 1 - LAN	4 - HDBaseT™ 5 - IR 4 - S/PDIF	Route any HDMI input to any or all HDBaseT outputs. S/PDIF loop outs for legacy AVR Dolby/DTS audio decoding. RS-232, IR, TCP/IP control. A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Supplies power over category cable to PoCc-enabled receivers.
AT-HD-M2C	HDMI Multi-Channel to Two-channel Converter	1 - HDMI	1 - HDMI 1 - S/PDIF 1 - TOSLink 1 - L/R RCA	Enables support of multi-channel and two-channel audio simultaneously.
AT-HDRX-IR	HDBaseT™ RX HDMI Extender w/IR	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR	A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Powered over category cable by PoCc enabled devices.
AT-HDWP-IR	HDBaseT™ RX HDMI Wall Plate w/IR	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR	A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Powered over category cable by PoCc devices.

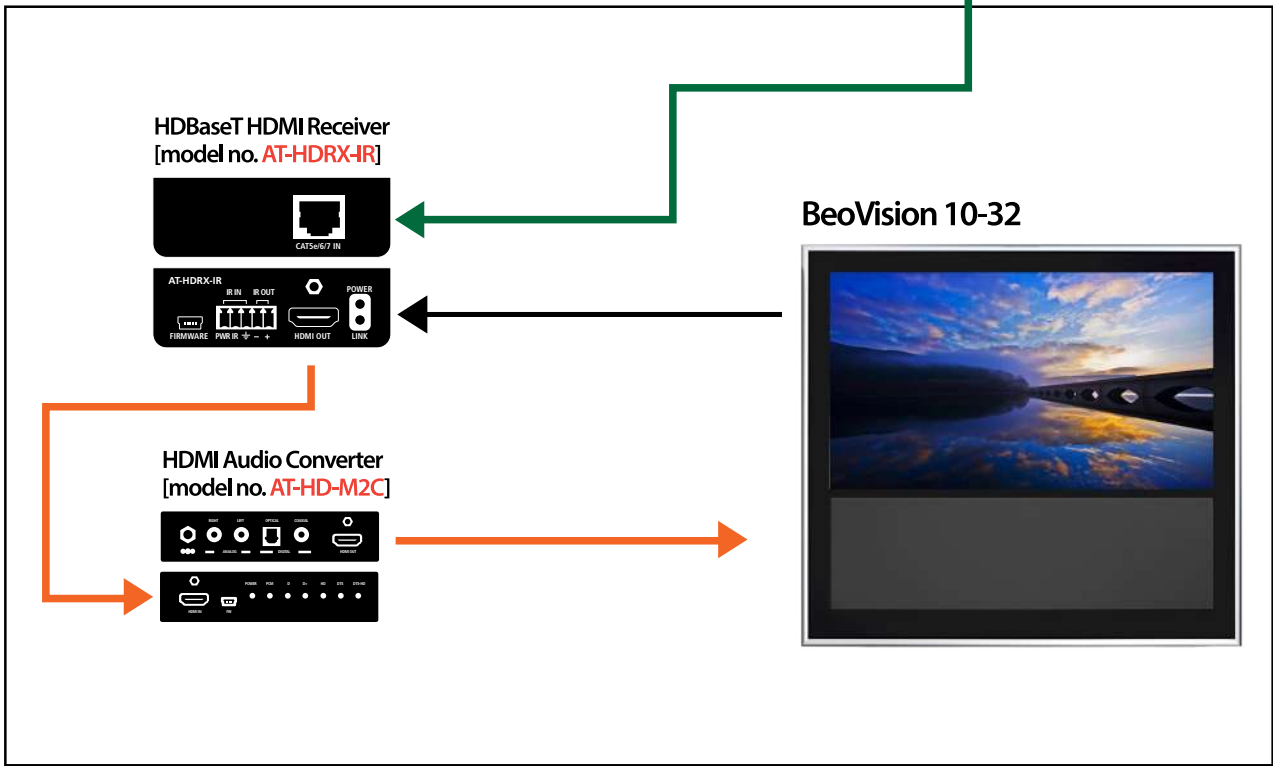
Equipment Rack



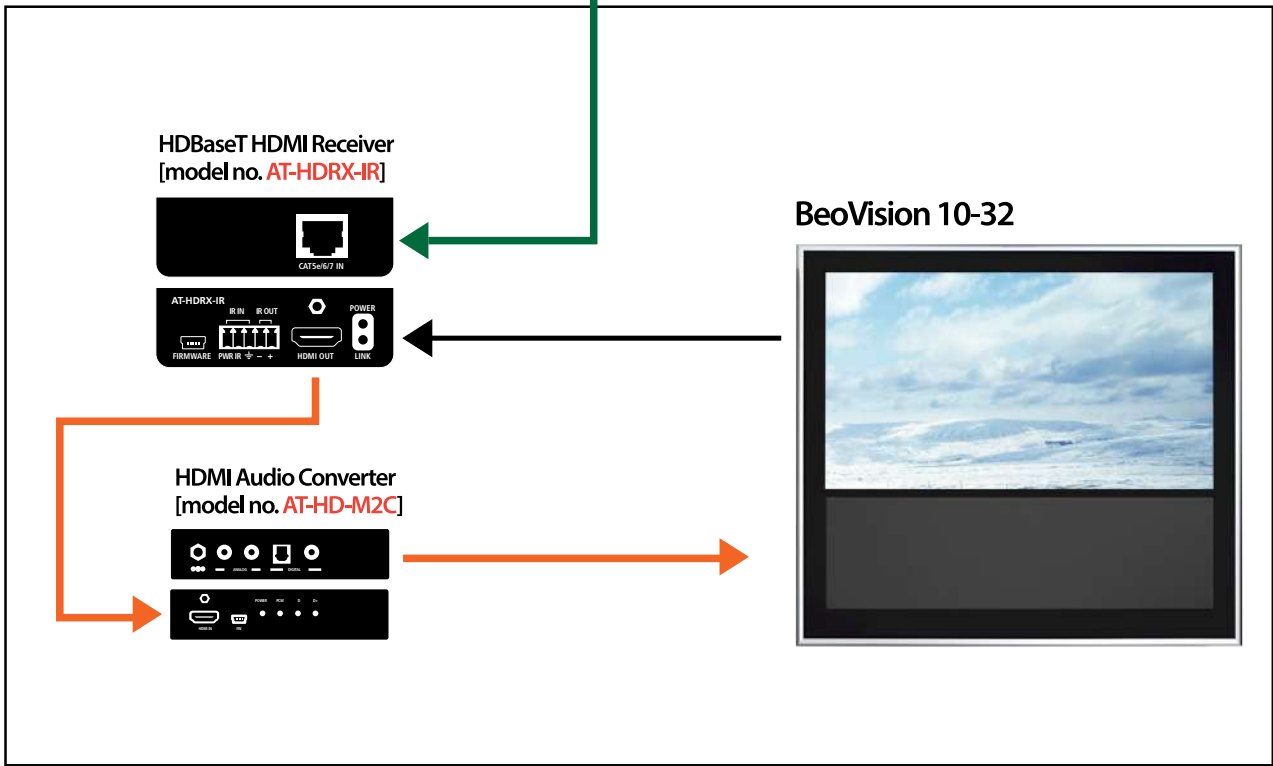
Living



Bedroom



Kitchen



- HDMI
- Audio
- HDBaseT (CAT Cable)
- IR Optocoupler
- IR

AV in each room is controlled by a single remote: Beo4, BeoRemote One, or BeoLink App.

<https://beoworld.org>

View the small residential solution diagram



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Connecting Technology

BANG & OLUFSEN

Multi-room systems in moderately sized residential environments don't require complexity, just careful planning with Atlona switching and distribution products to create the ultimate Bang & Olufsen customer experience. In this residence, the Living Room, Master Bedroom, a Second Bedroom, and Kitchen all enjoy an enhanced audio visual experience. Advanced technology to share sources and distribute signals is hidden while maintaining ease-of-operation.



AT-PRO3HD66M

The BeoVision 11 in the Master Bedroom can select from any source connected to the AT-PRO3HD66M matrix switcher in the Equipment Rack and send control signals back to the source equipment using the AT-HDRX-IR HDBaseT to HDMI receiver.

The Second Bedroom and Kitchen also utilize the AT-HDRX-IR receiver to receive HDBaseT signals and facilitate hassle-free IR control. In addition, the AT-HD-M2C audio converter is inserted in-line to convert multi-channel audio on the HDMI signal into two-channel audio for the BeoVision 10 TV.

The Living Room provides an oasis of sound and vision provided by the BeoVision Avant TV and BeoLab 18 Speakers. Speakers utilize the simplicity of Power Link for connection to the TV. The AT-HDWP-IR HDBaseT wall plate is hidden behind the TV to provide an HDMI output accept IR commands from a Beo4 or BeoRemote One remote control for control of the TV, switcher, and sources.

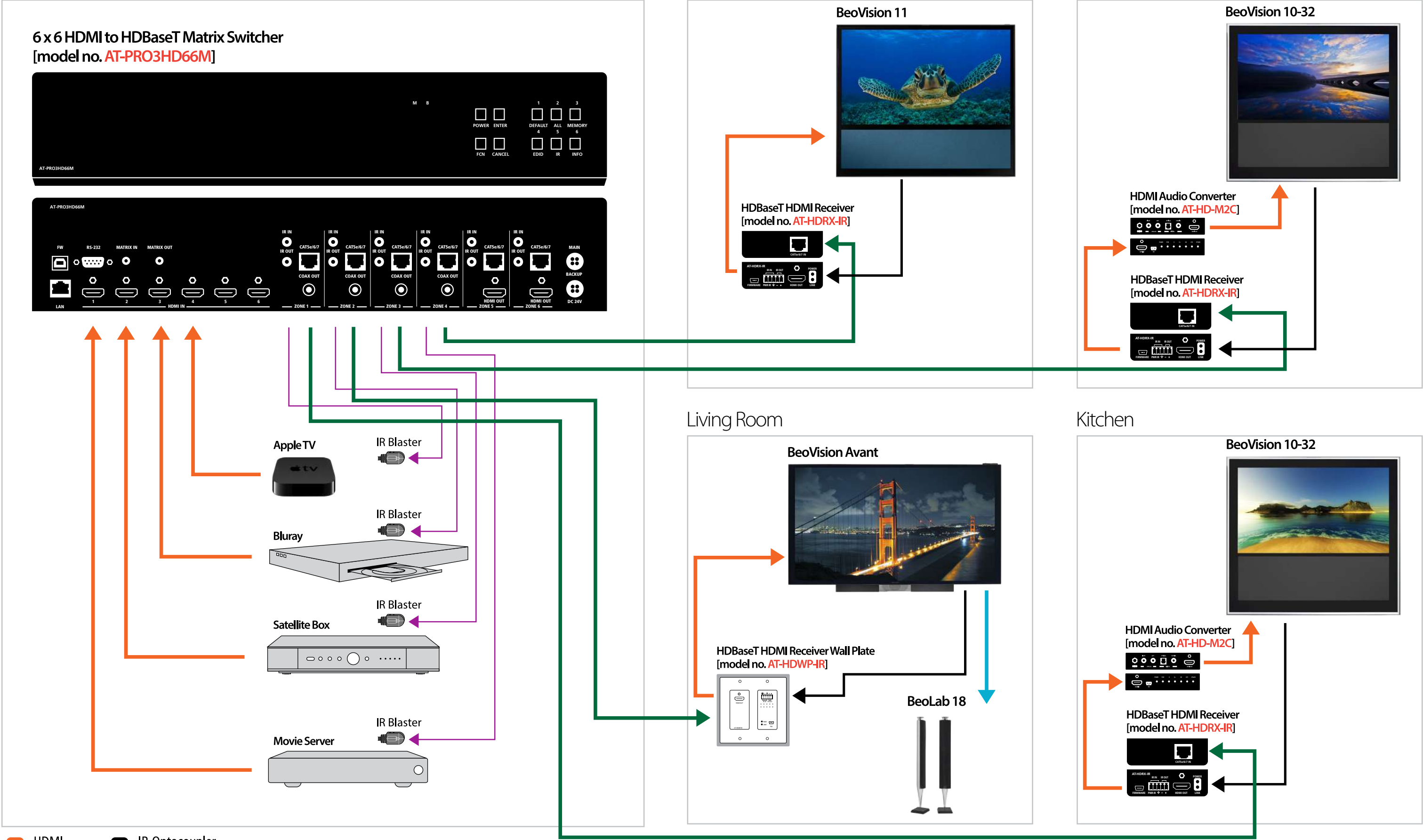


Model	Description	Inputs	Outputs	Benefits
AT-PRO3HD66M	HDMI to HDBaseT™ 6 x 6 Matrix Switcher	6 - HDMI 1 - RS-232 7 - IR 1 - LAN	6 - HDBaseT™ 7 - IR 4 - S/PDIF 2 - HDMI	Route any HDMI input to any or all HDBaseT™ outputs. S/PDIF loop outs for legacy AVR Dolby/DTS audio decoding. RS-232, IR, TCP/IP control. A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Supplies power over category cable to PoCc-enabled receivers.
AT-HD-M2C	HDMI Multi-Channel to Two-channel Converter	1 - HDMI	1 - HDMI 1 - S/PDIF 1 - TOSLink 1 - L/R RCA	Enables support of multi-channel and two-channel audio simultaneously.
AT-HDRX-IR	HDBaseT™ RX HDMI Extender w/IR	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR	A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Powered over category cable by PoCc-enabled devices.
AT-HDWP-IR	HDBaseT™ RX HDMI Wall Plate w/IR	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR	A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Powered over category cable by PoCc devices.

Equipment Rack

Master Bedroom

Second Bedroom



AV in each room is controlled by a single remote: Beo4, BeoRemote One, or BeoLink App.

<https://beoworld.org>

View the medium residential solution diagram



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LARGE RESIDENTIAL SPACE SOLUTION

A large, sophisticated manor calls for a sophisticated approach to audio visual entertainment. This residence includes separate media spaces for a home theater and living room along with two bedrooms a bathroom and kitchen. With Bang & Olufsen and Atlona, there's no need for duplicated source devices or complicated control schemes – everything works together in the background for a simplified user experience.



AT-PRO2HD88M

Full, high definition video signals start at the Equipment Rack. Sources are connected to the AT-PRO2HD88M 8x8 matrix switcher for distribution throughout the residence. The BeoSystem 4 processor is utilized for optimized sound and vision to the Theater and Bathroom. Long distance HDMI and control signal transmission throughout the residence is facilitated by Atlona HDBaseT Extenders.

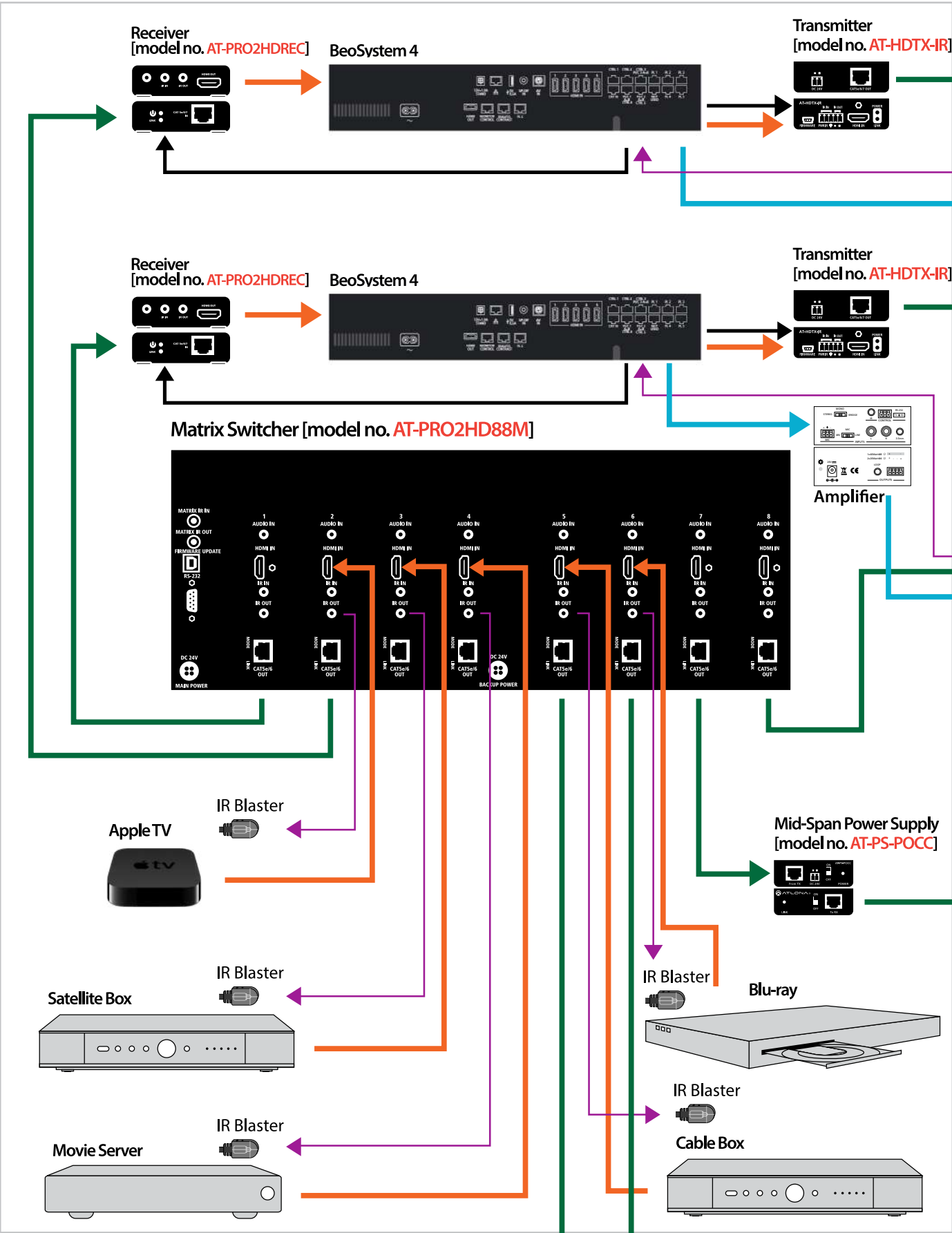
Careful consideration is given to the audio for the residence. BeoLab 5 and BeoLab 17 speakers are utilized for immersive sound in the Theater while BeoLab 12 speakers are used in the Living Room. All speaker signals are carried over Power Link connections. In the Kitchen an AT-HD-M2C audio converter is used to convert multi-channel audio to two-channel audio for the BeoVision 10 TV.

AV system control is made easy as IR commands from a Beo4 or BeoRemote One remote control are routed from the Bedrooms, Living Room and Kitchen to the Equipment Rack via the HDBaseT link. Simplicity is also the rule for rooms without Bang & Olufsen TVs: All that is needed is a B&O IR to route IR commands from the Theater and Bathroom systems back to the BeoSystem4 processor for seamless operation.

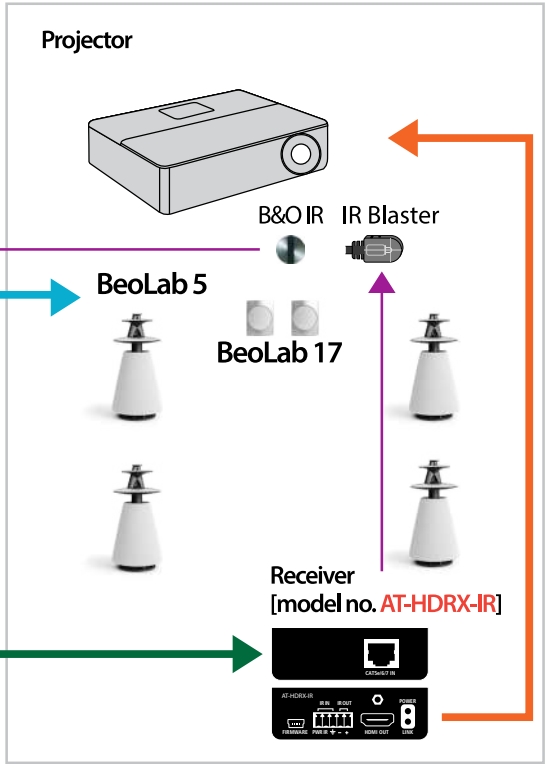


Model	Description	Inputs	Outputs	Benefits
AT-PRO2HD88M	HDMI to HDBaseT™ 8 x 8 Matrix Switcher	8 - HDMI 1 - RS-232 9 - IR 8 - Analog Audio	8 - HDBaseT™ 9 - IR	Route any HDMI input to any or all HDBaseT™ outputs. RS-232 and IR control. A/V and IR signal extension up to 230 feet (70 meters) @ 1080p.
AT-HDTX-IR	HDBaseT™ TX HDMI Transmitter w/IR	1 - HDMI 1 - IR	1 - HDBaseT™ 1 - IR	Uses the advanced technology of HDBaseT combined with power over category cable (PoCc™) to extend signals to 230 feet (70 meters) over a single category cable.
AT-HDRX-IR	HDBaseT™ RX HDMI Extender w/IR	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR	A/V and IR signal extension up to 230 feet (70 meters) @ 1080p. Powered over category cable by PoCc-enabled devices.
AT-PRO2HDREC	HDMI Receiver for PRO2HD series matrix switchers	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR 1 - RS-232	Extends IR, RS-232, audio and video content between sources and displays when used in tandem with a PRO2HD matrix switchers.
AT-PRO3HDREC	HDMI Receiver for PRO3HD series matrix switchers	1 - HDBaseT™ 1 - IR	1 - HDMI 1 - IR 1 - RS-232	Extends IR, RS-232, audio and video content between sources and displays when used in tandem with a PRO3HD matrix switchers. Powered over category cable by PoCc-enabled devices.
AT-HD-M2C	HDMI Multi-Channel to Two-channel Converter	1 - HDMI	1 - HDMI 1 - S/PDIF 1 - TOSLink 1 - L/R RCA	Enables support of multi-channel and two-channel audio simultaneously.
AT-PS-POCC	Mid-Span Power Supply	1 - HDBaseT™	1 - HDBaseT™	Mid-Span Power Supply enables non-PoCc products to work with other HDBaseT products that require PoCc.

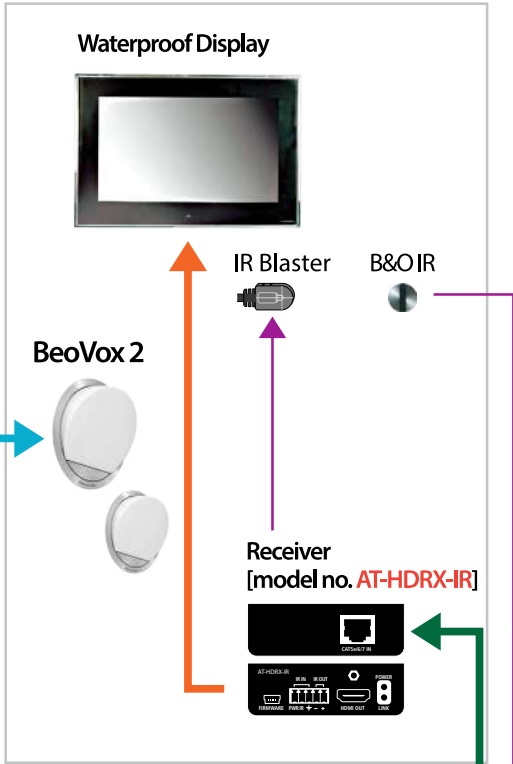
Equipment Rack



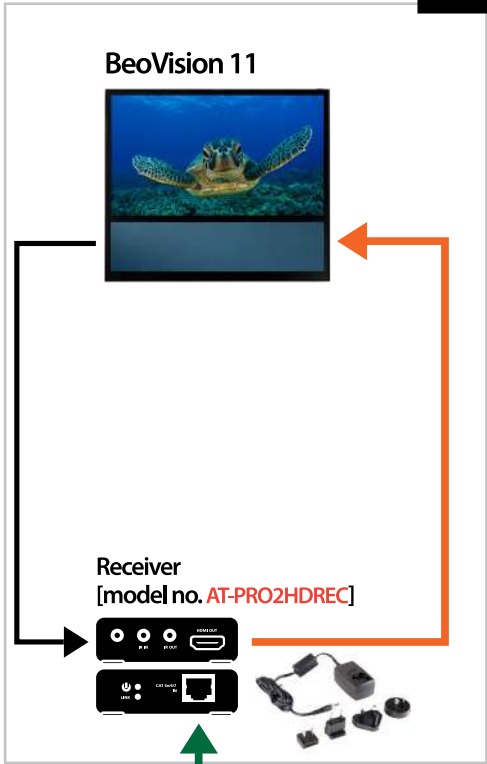
Theater



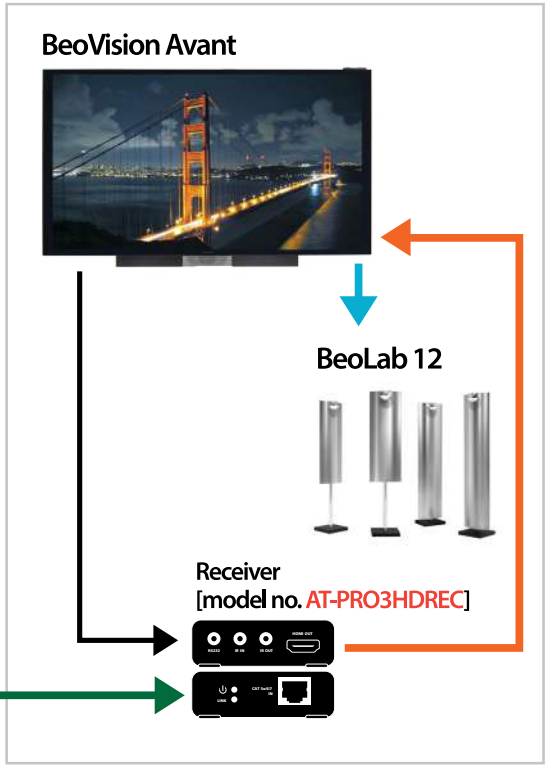
Bathroom



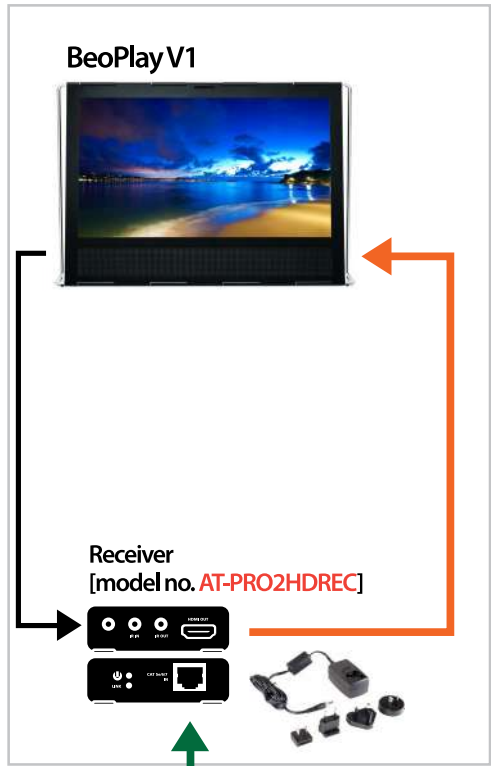
Master Bedroom



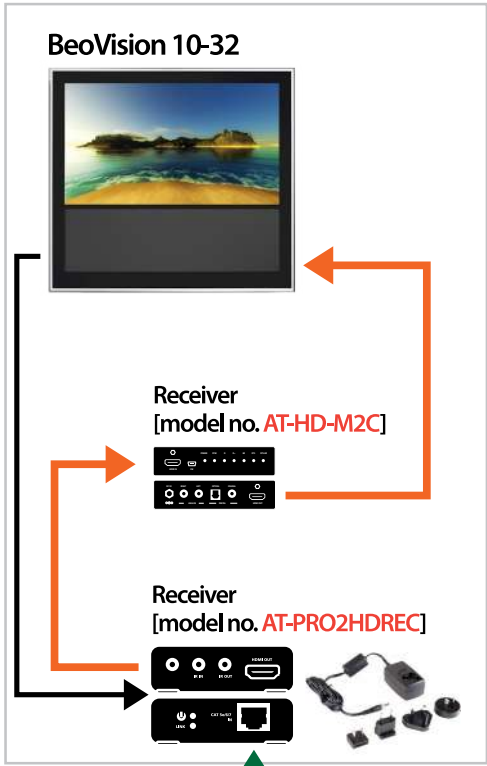
Living Room



Second Bedroom



Kitchen



- HDMI
- Audio
- HDBaseT (CAT Cable)
- IR Optocoupler
- IR

AV in each room is controlled by a single remote: Beo4, BeoRemote One, or BeoLink App.

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View the large residential solution diagram



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EssentialINSTALL MAGAZINE

A recent home cinema job in Oslo was so low-key, that sometimes it disappears completely. But Bang & Olufsen project designer Stian Holmen made sure its ease of use and functionality grabbed all the attention.

Oslo is the oldest of the Scandinavian capitals with a history dating back 1,000 years. Many homes in this nucleus of Norway are historic, if not as old. The technology in one of those period pieces, however, is bang up to date. That's if you can see it.

Glide across the polished wooden floor of the sitting room that forms the heart of this home and its latest custom installation is hidden, totally. The home cinema appears as if by magic only at the push of a button, yet is all controlling, integrating lights, curtains and, of course, the large screen stowed away in the ceiling. When not in use, there is only a 65IN flat-panel TV on the wall.

Bang & Olufsen project designer Stian Holmen was approached by homeowners embarking on a major redesign and renovation. Restoring period fittings is tricky; trickier still is blending a hyper-modern multi-zone AV distribution network that enables family members to walk into any one of 11 rooms originally scheduled for upgrading and watch videos, listen to music or view security camera feeds from any source.

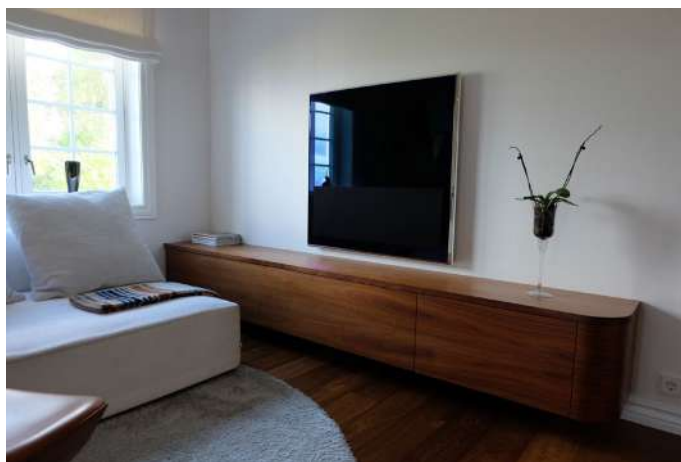
All this Stian and his team had to do with immaculate attention to detail. The installation had to preserve the home's historic architecture and maintain an ultra-low profile to blend in with the new decor. It also had to meet the varying demands of a family that included children with tastes and ways of using technology that differed wildly from grown ups.



Bang & Olufsen, Oslo Vest (Norway) met the challenge by specifying advanced Atlona distribution products to form the backbone of the installation. This Atlona system seamlessly integrates and complements the Bang & Olufsen displays, audio systems and other technology throughout the home, which offers fantastic views across Oslo.

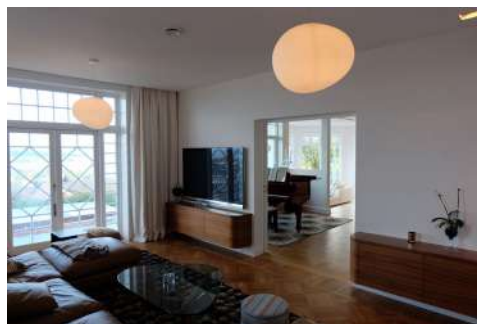
"This was an existing B&O customer who wandered into the store," says Stian, who

carried out a comprehensive site survey before designing the project. "It was a complete refurbishment with a new installation. The system 'grew' during the process, with more rooms being added as the project progressed. In the end it included a total of 18 rooms consisting of TV and sound zones."



The home cinema was to have both a motorized screen and a lift for the projector concealed in the ceiling - no problem shoe horning such equipment into a modern home. But this home's fine, classic Scandinavian design threw up challenges. Its antique - and unique - construction of brick walls created major issues such as running cabling out of all zones in the house.

Installing a modern AV system required a solution that could switch and distribute all sources to all B&O displays and components across very long distances. It was a project that demanded easy-to-install category (CAT) cabling to minimize installation impact while accommodating all the uncompressed HD, AV, control and power required.



The project also called for intricate construction skills and AV technology of a pedigree no less impressive than that of Oslo's finest architecture: "We are exclusively a B&O dealer for the quality and system integration Bang & Olufsen products provide. Atlona meanwhile was

the natural choice for HDMI distribution in such a large installation. It functions perfectly."

This story is preprinted with permission. This brochure includes photographs not featured in the magazine.

CASE STUDY - EVER PRESENT, NEVER THERE

"We are exclusively a B&O dealer for the quality and system integration Bang & Olufsen products provide. Atlona meanwhile was the natural choice for HDMI distribution in such a large installation. It functions perfectly."

Bang & Olufsen delivered in no small part because it too boasts an enviable history. The Denmark company founded in 1925 by Peter Bang and Svend Olufsen has become an iconic international AV symbol, its products sold in more than 100 countries. B&O installers however cannot dwell in the past, regardless of the historical context. Its reputation stands or falls on what it does now.

"Most of the interior was stripped down and cabling was laid in collaboration with an electrician," says Stian. "We used about 3,000 meters of CAT 7 cables from B&O. The customer had a lot of the furniture custom-made for the home so the system had to blend in. Not only was the AV system required to distribute content from any source to any display in any combination in the home.

"It also needed to route several sources to multiple displays simultaneously. In addition, the system had to integrate security cameras and legacy analogue devices - a tall order for a single switching device. Inputs including audio, video, control interfacing and security monitoring equipment had to be seamlessly available to users at the touch of a button anywhere in the house." Stian's colleague at Bang & Olufsen, Kjell Hasle, echoes the difficulty of blending 21st century technology into homes from decade, if not centuries, past: "We were working around solid walls of brick and had to implement very long cable runs to circumvent the historic architecture restrictions. We also had to deliver a very easy-to-use and high-quality HD video system throughout the home.



"We had to match the elegant B&O displays and components being installed with the elegance of the home decorations, furniture and fittings. We immediately brought in Atlona. Providing all these capabilities on a single platform is not a trivial challenge. In the past, we've been forced to design hybrid systems to accommodate these types of requirements."

This home was different, most of the equipment was fitted into three adjacent equipment racks, which also included a monitor station. Utilizing the AT-PRO2HD1616M gave 16 input zones and 16

output zones at a distance of up to 328ft. With this system they were able to integrate both the home entertainment and camera technology into one system for complete integration.



Equipment included control panels in remote locations to offer more capabilities and control from any point. The AT-PRO2HD1616M integrated interfaces allow for the control if any connected device. The technology also allowed EDID information for the display devices to be copied into the unit to allow for faster switching and a more comprehensive digital handshake between devices.

Compact receiver units for the AT-PRO2HD1616M enabled Bang & Olufsen to hide all connection equipment behind the displays to give an aesthetic, modern look to display

locations while providing full HD audio and video to each display. Connecting displays to be adjusted from any of the control stations in the home.

"The whole system - from home entertainment equipment to the camera monitor kit - was integrated into each other using Atlona's equipment. Bang & Olufsen provided everything requested using a single infrastructure with the Atlona kit. Providing an entire system solution is what Bang & Olufsen and Atlona are able to effectively deliver for our clients."

Stian adds: "One of the most challenging aspects of the installation including dividing the system in two to accommodate the children in the house. As in most households parents and children don't listen to the same music or watch the same programs. In this house, the children have separate decoders for their TVs and separate sound system and Airplay arrangements."

Parents and children can differ from time to time, but so can clients and installer teams. The latter's favourite part of the installation is its hidden, now-you-see-me-now-you-don't nature. For the client however, top of the list is overall quality and ease of use: "It is simple to control the whole house including lighting, KNX, curtains, internal CCTV and the B&O/Atlona entertainment system."

ESSENTIAL KIT LIST

Atlona AT-PRO2HD1616M 16x16 HDMI to HDBaseT Matrix Switcher

Atlona AT-PRO2HDREC HDBaseT to HDMI Receivers

Nine Bang & Olufsen TVs/Displays

11 Rooms with Bang & Olufsen Sound System/Audio Components

ATLONA CUSTOM INSTALLATION TESTING KIT

Must have tools to increase installer productivity in the field



The Atlona KIT-PROHD3 is designed to diagnose digital connectivity issues in AV systems. This tool suite allows residential and commercial integrators and installers the ability to diagnose 99% of all digital connectivity issues in moments, saving both time and overhead. Don't waste hours on troubleshooting ever again, with the KIT-PROHD3 your answers are just minutes away. With the ability to test and confirm the presence of A/V signals, EDID, HDCP, HPD, 5v, cables and more, you can resolve issues before they start. Find the source of your syncing issues with each part of the Atlona Custom Installation Testing Kit. Test cables and displays with the HD800, test sources with the DIS7-PROHD, and have a quick leave behind solution for EDID and HDCP sync issues with the UHD-SYNC.

PARTS REFERENCE GUIDE

HDMI Switchers	B&O Part #	Description
AT-HD4-V41	8780314	Atlona 4x1 HDMI SWITCH with 3D, ARC and Ethernet
AT-HD4-V42-B&O	8780315	Atlona 4x2 HDMI SWITCH with 3D, ARC and Ethernet
AT-PRO3HD44M	8780316	Atlona 4x4 HDMI Matrix Switch to HDBaseT (RECEIVERS ARE OPTIONAL)
AT-PRO3HD66M	8780317	Atlona 6x6 HDMI Matrix Switch to HDBaseT (RECEIVERS ARE OPTIONAL)
AT-PRO2HD88M	8780318	Atlona 8x8 HDMI Matrix Switch to HDBaseT (RECEIVERS ARE OPTIONAL)
AT-PRO2HD1616M	8780319	Atlona 16x16 HDMI Matrix Switch to HDBaseT (RECEIVERS ARE OPTIONAL)
HDMI Extenders	B&O Part #	Description
AT-PS-POCC	8780335	Atlona Mid-span Power supply for PoCc
AT-PRO2HDREC *	8780320	Atlona HDMI Receiver for PRO2HD series switchers
AT-PRO3HDREC *	8780334	Atlona HDMI Receiver for PRO3HD series switchers
AT-HDTX-IR	8780321	Atlona HDBaseT HDMI Transmitter w/IR
AT-HDRX-IR *	8780322	Atlona HDBaseT HDMI Receiver w/IR
AT-HDTX-RSNET	8780323	Atlona HDBaseT HDMI Transmitter w/IR, RS-232, and Ethernet
AT-HDRX-RSNET *	8780324	Atlona HDBaseT HDMI Receiver w/IR, RS-232, and Ethernet
AT-HDWP-IR *	8780325	Atlona HDBaseT HDMI Receiver 2-Gang US Decora Wall Plate w/IR
AT-HDWP-IR-UK *	8780326	Atlona HDBaseT HDMI Receiver UK Wallplate w/IR
AT-HDWP-RSNET *	8780327	Atlona HDBaseT HDMI Receiver 2-Gang US Decora Wall Plate w/IR, RS-232, and Ethernet
AT-HDWP-RSNET-UK *	8780328	Atlona HDBaseT HDMI Receiver 2-Gang UK Wall Plate w/IR, RS-232, and Ethernet
Converters	B&O Part #	Description
AT-AD2	8780329	Atlona OPTICAL/COAXIAL CONVERTER
AT-UHD-SYNC	8780338	Atlona 4K HDMI Emulator/Tester
AT-HD-M2C	8780333	Dolby/DTS to 2CH down-converter
Accessories		Description
AT-BO-PRO2HD-1MIR	8780311	1M 3.5mm Optocoupler Male to Male IR Cable. Required with AT-PRO2HDREC Receivers and B&O TV's
AT-BO-PRO3HD-1MIR	8780312	1M 3.5mm Optocoupler Male to Male IR Cable. Required with AT-HDRX-IR and PRO3HDREC Receivers and B&O TV's
AT-BO-RJ45-BW-1MIR	8780332	1M RJ45 Optocoupler to Bare Wire IR cable. Required with AT-HDRX-IR, AT-HDWP-IR, AT-HDWP-IR-UK, AT-HDRX-RSNET, AT-HDWP-RSNET, HDWP-RSNET-UK Receivers and Bang & Olufsen TV's
Testing Kit	B&O Part #	Description
KIT-PROHD3	8780331	Testing Kit Includes AT-DIS7-PROHD, AT-HD800, UHD-SYNC, 5 hour battery for monitor and custom carrying case

* Requires IR Optocoupler Cables for Control

Bang & Olufsen Resource page: www.atlona.com/Bang-and-Olufsen

Ordering

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URL: www.atlona.com/support/



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