



# Atlona and Bang & Olufsen

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

2015 ISSUE 2

# SMALL RESIDENTIAL SPACE SOLUTION

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. 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-UHD-PRO3-44M

The Equipment Rack holds the key to maximum system utilization. The AT-UHD-PRO3-44M 4x4 matrix switcher accepts 4K/UHD 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.

The BeoVision 11 in the Bedroom receives an extended distance, 100-meter, 4K/UHD signal and utilizes the control signal extension capability of the AT-UHD-EX-100CE-RX receiver to select any source connected to the AT-UHD-PRO3-44M matrix switcher in the Equipment Rack.

For the Living Room entertainment space, the BeoVision Avant TV receives audio and video signals from the AT-UHD-EX-70C-RX receiver which is hidden behind the TV. Multi-channel sound is processed by the TV and carried over Power Link connections to the BeoLab 18 speakers surrounding the listening space.

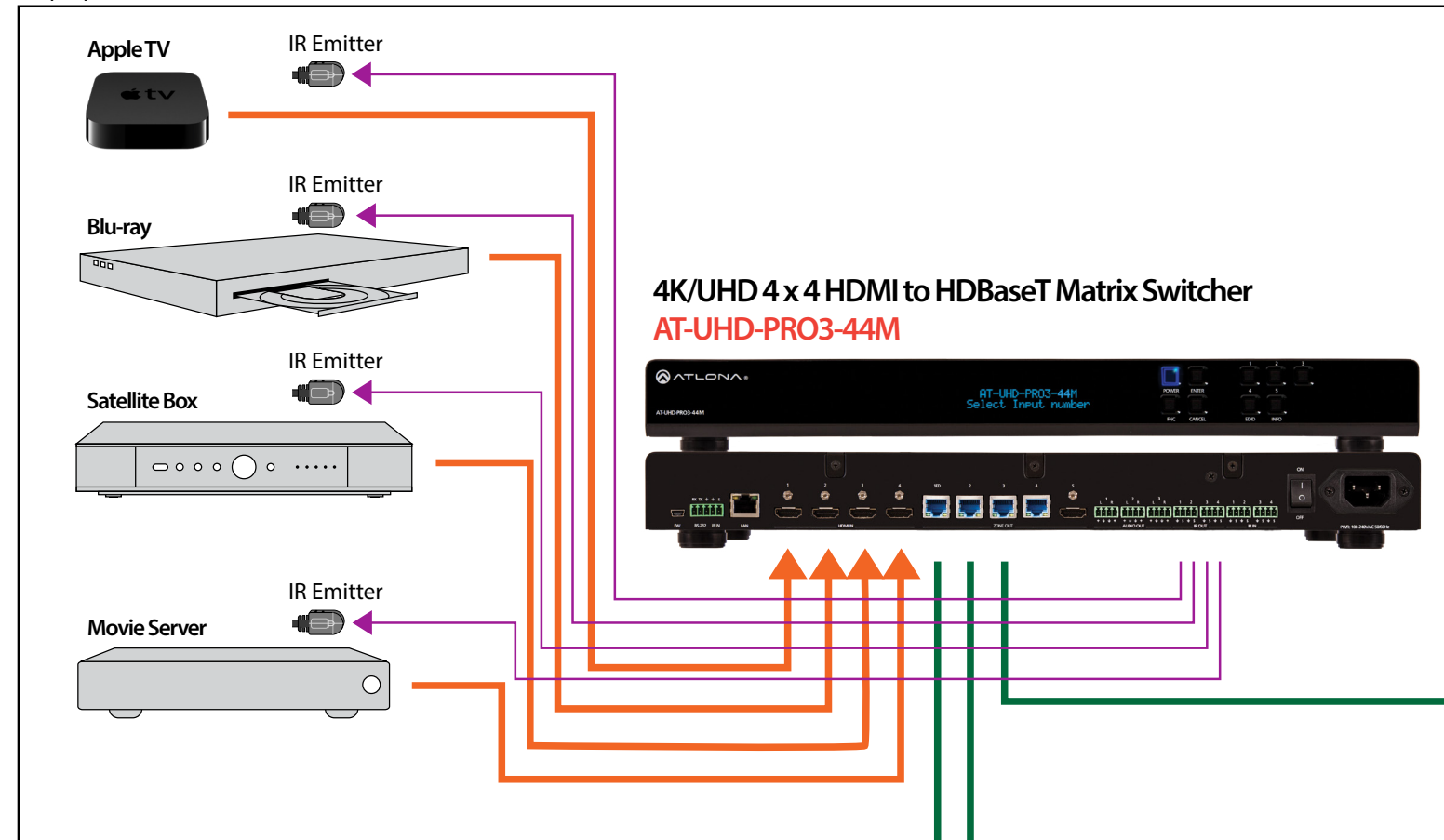


The Kitchen makes efficient use of space with the BeoVision 10 TV which incorporates two-way speaker and bass units. To convert multi-channel audio to two-channel audio for this space while preserving multi-channel audio for the Living Room, the AT-HD-M2C audio converter is placed in-line between the AT-UHD-EX-70C-RX HDBaseT extender receiver and the TV.

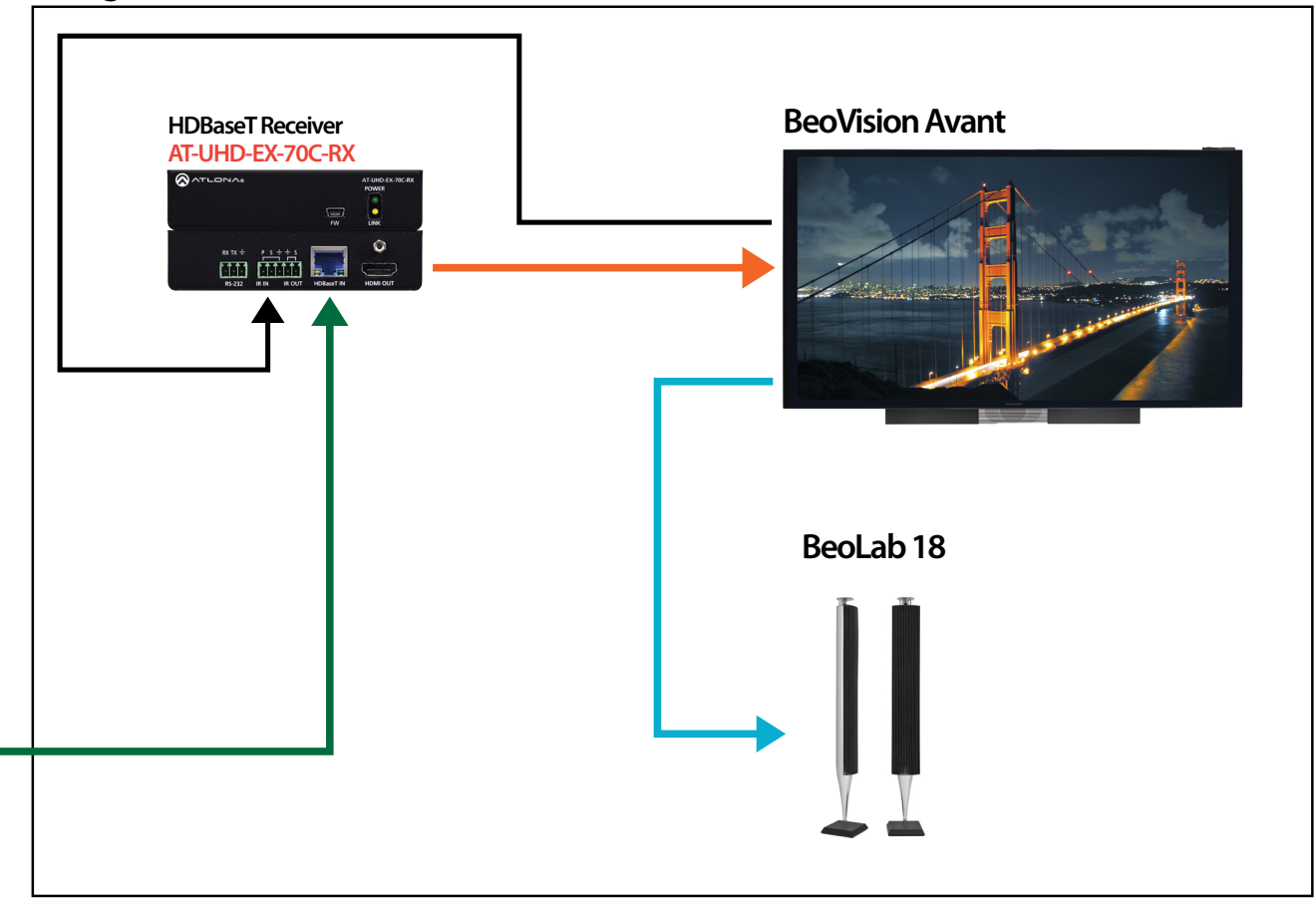
For ease of control, IR signals are routed to the Equipment Rack via the HDBaseT link from each Atlona receiver in the residence. This allows remote controls like the Beo4, BeoRemote One, or BeoLink App to control the displays and source equipment from one convenient, unified remote.

Model	Description	Inputs	Outputs	Benefits
AT-UHD-PRO3-44M	HDMI to HDBaseT™ 4 x 4 Matrix Switcher	4 – HDMI 1 – LAN 1 – RS-232 5 – IR	4 – HDBaseT 1 – HDMI 3 – 2ch Audio 1 – RS-232 4 – IR	Route any HDMI input to any or all HDBaseT outputs with 4K/UHD @ 60Hz capability and HDCP 2.2 compliance. Provides Power over Ethernet for receivers and analog audio breakout. Provides 1x100-meter and 3x70-meter HDBaseT outputs.
AT-UHD-EX-100CE-RX	4K/UHD 100M HDBaseT Receiver with Control	1 – HDBaseT 1 – RS-232 1 – IR	1 – HDMI 1 – RS-232 1 – IR	A/V and control extension up to 328 feet (100 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 100 m with CAT6a/7.
AT-UHD-EX-70C-RX	4K/UHD 70M HDBaseT Receiver with Control	1 – HDBaseT 1 – RS-232 1 – IR	1 – HDMI 1 – RS-232 1 – IR	A/V and control extension up to 230 feet (70 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 40 m with CAT6a/7; 1080P extension up to 70 m with CAT 6a/7.
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.

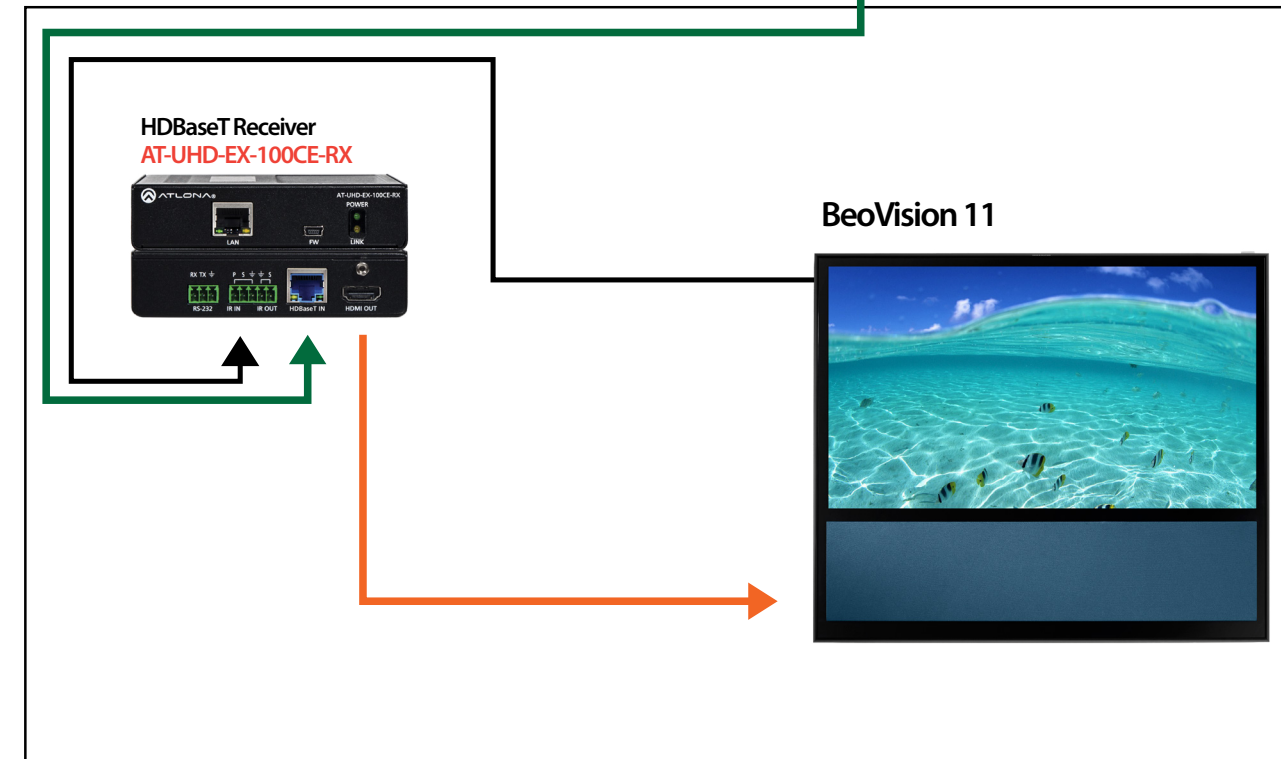
Equipment Rack



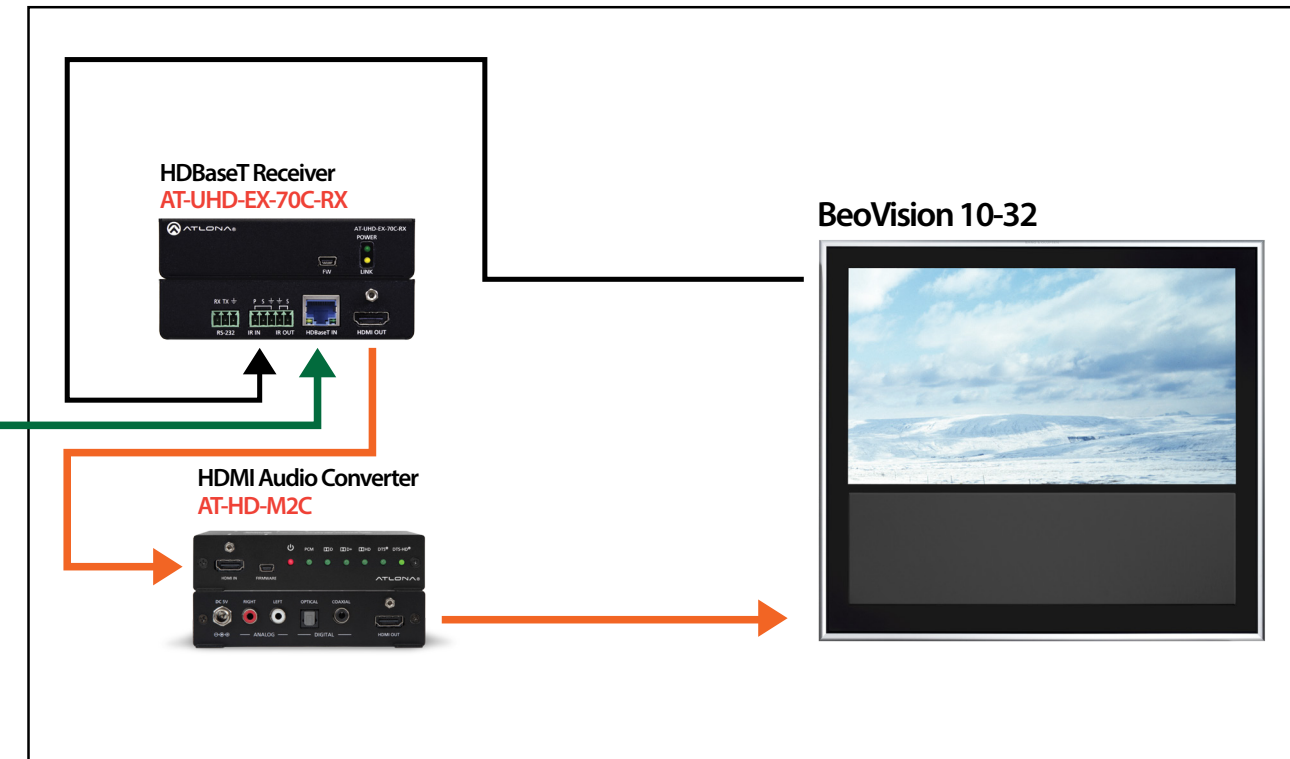
Living Room



Bedroom



Kitchen



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

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

View the small residential solution diagram



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# MEDIUM RESIDENTIAL SPACE SOLUTION

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 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-UHD-PRO3-66M

The BeoVision 11 in the Master Bedroom can select from any source connected to the AT-UHD-PRO3-66M matrix switcher in the Equipment Rack and send control signals back to the source equipment using the AT-UHD-EX-70C-RX HDBaseT to HDMI receiver.

The Second Bedroom utilizes the AT-UHD-EX-70C-RX 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-UHD-EX-100C-RX extended distance receiver provides an HDMI output and accepts IR commands from a Beo4 or BeoRemote One remote control for control of the TV, switcher, and sources.

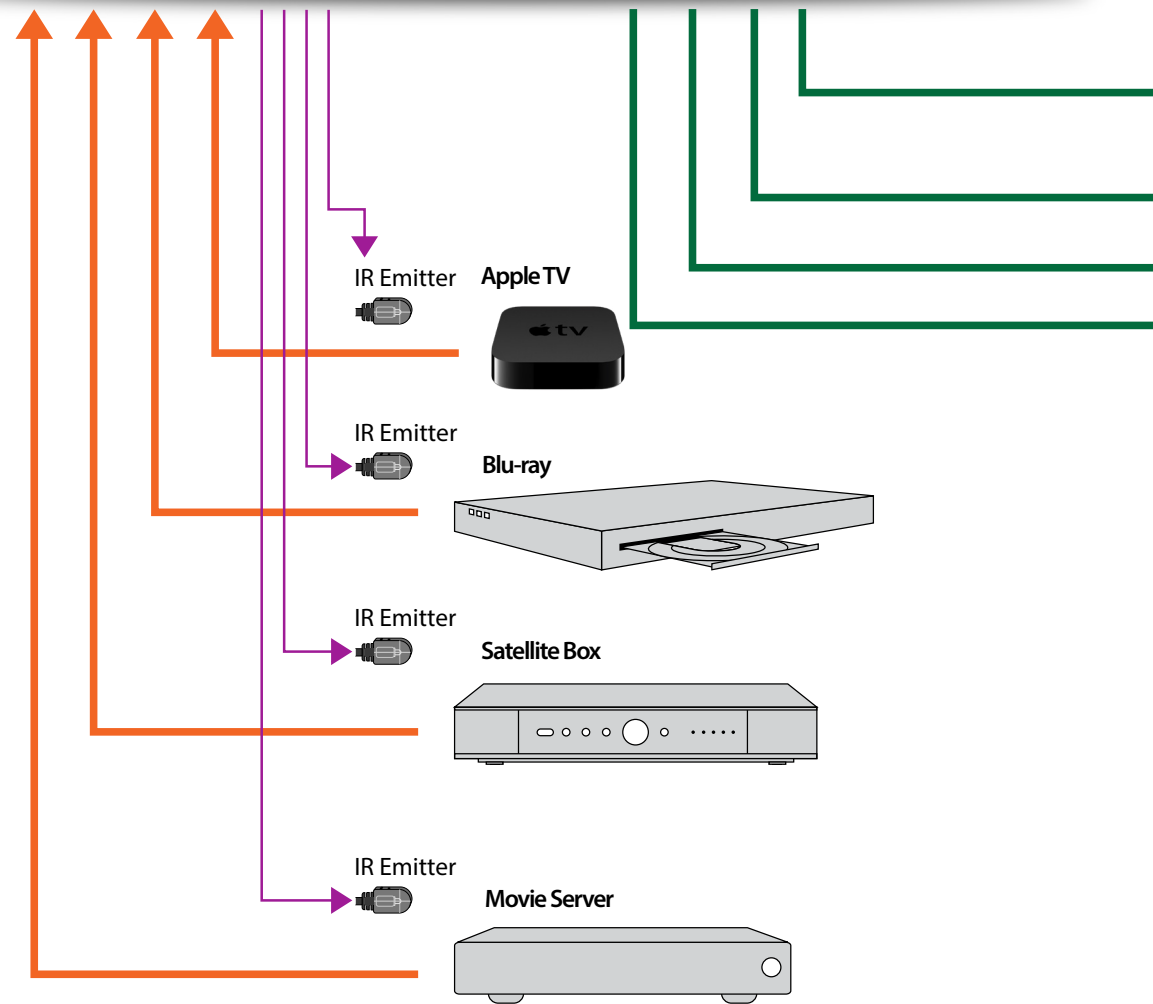
Like the Living Room, the Kitchen's greater distance from the switcher benefits from the AT-UHD-EX-100C-RX receiver's 100-meter extended distance capability. Here, the receiver's compact form factor hides discreetly inside the connection panel on the back of the BeoPlay V1.



Model	Description	Inputs	Outputs	Benefits
AT-UHD-PRO3-66M	HDMI to HDBaseT™ 6x6 Matrix Switcher	6 – HDMI 1 – LAN 1 – RS-232 7 – IR	6 – HDBaseT 2 – HDMI 4 – 2ch Audio 1 – RS-232 6 – IR	Route any HDMI input to any or all HDBaseT outputs with 4K/UHD @ 60Hz capability and HDCP 2.2 compliance. Provides Power over Ethernet for receivers and analog audio breakout. Provides 2x100-meter and 4x70-meter HDBaseT outputs.
AT-UHD-EX-100CE-RX	4K/UHD 100M HDBaseT Receiver with Control	1 – HDBaseT 1 – RS-232 1 – IR	1 – HDMI 1 – RS-232 1 – IR	A/V and control extension up to 328 feet (100 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 100 m with CAT6a/7.
AT-UHD-EX-70C-RX	4K/UHD 70M HDBaseT Receiver with Control	1 – HDBaseT 1 – RS-232 1 – IR	1 - HDMI 1 - RS-232 1 - IR	A/V and control extension up to 230 feet (70 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 40 m with CAT6a/7; 1080P extension up to 70 m with CAT 6a/7.
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.

Equipment Rack

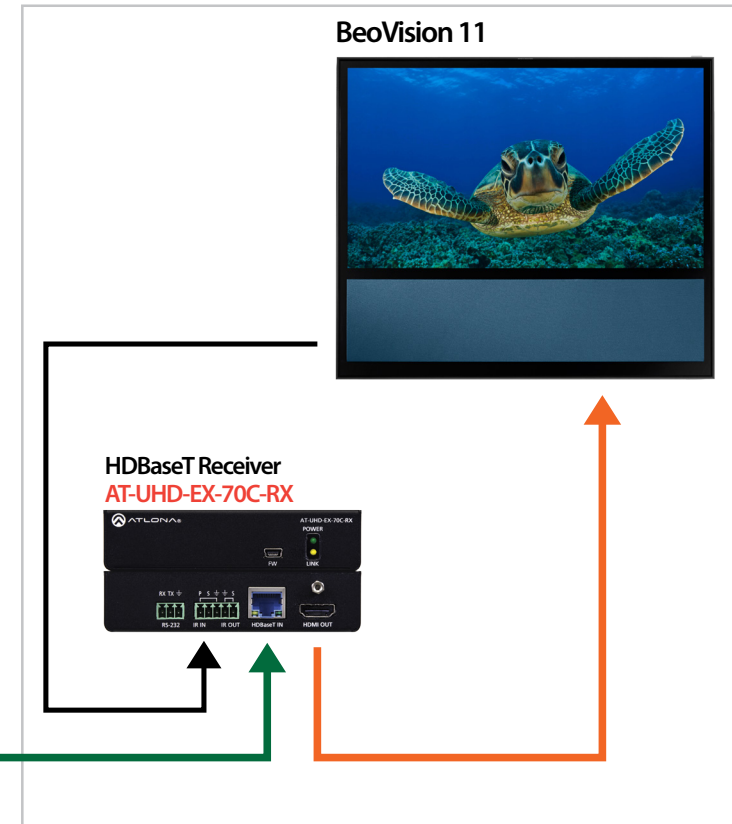
4K/UHD 6 x 6 HDMI to HDBaseT Matrix Switcher  
AT-UHD-PRO3-66M



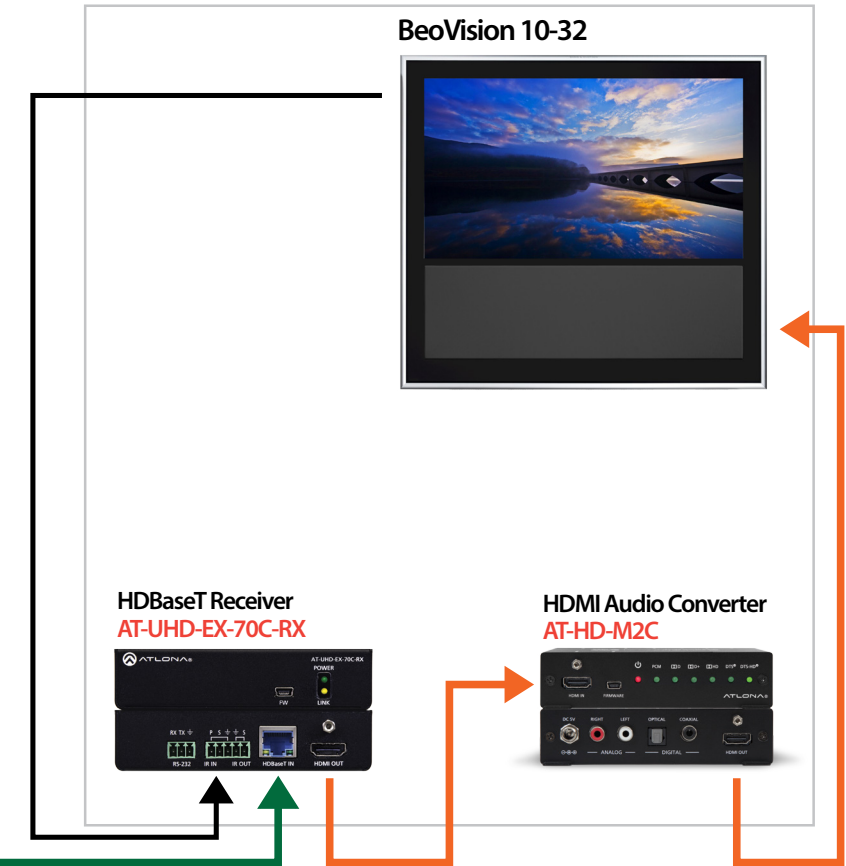
- HDMI
- Audio
- HDBaseT (CAT Cable)
- IR Cable
- IR Emitter

Medium Residential Solution Diagram

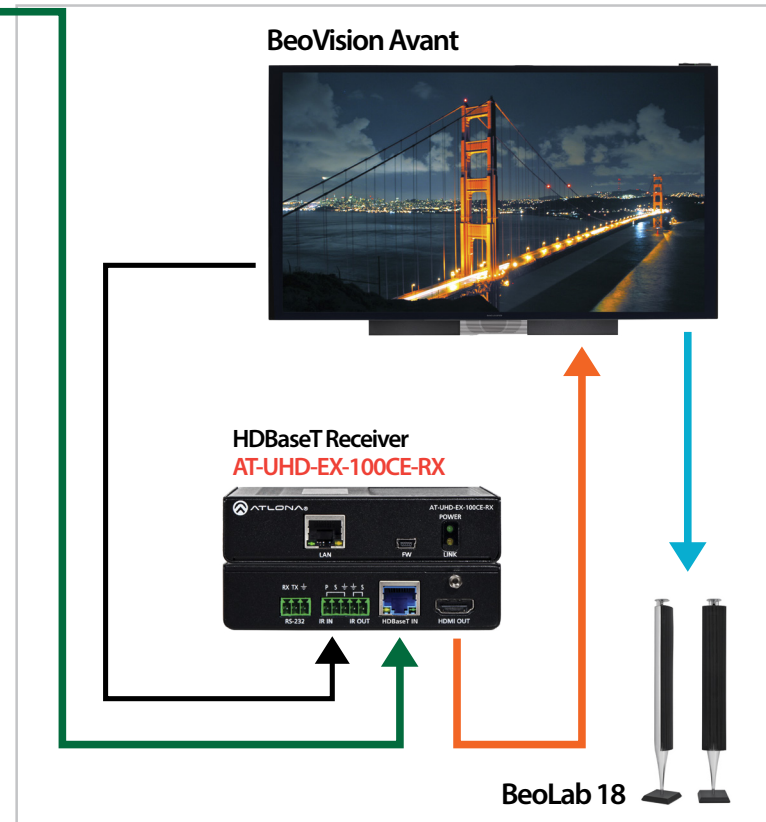
Master Bedroom



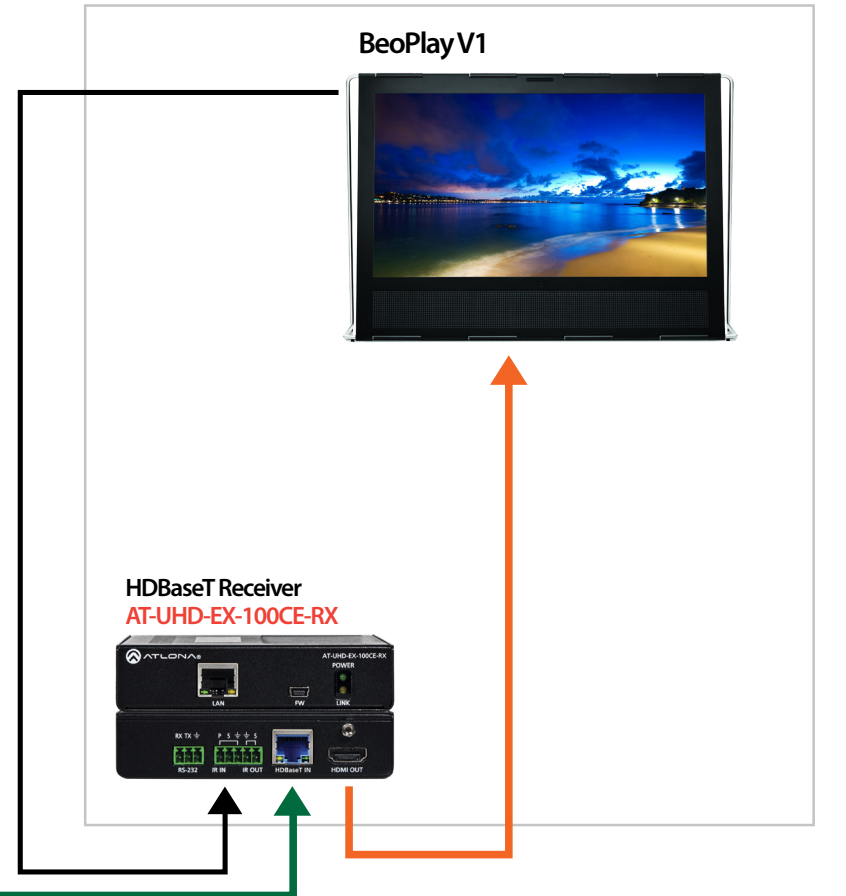
Second Bedroom



Living Room



Kitchen



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

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.

Careful consideration is given to the audio for the residence. BeoLab 5 and BeoLab 17 speakers are utilized for immersive sound in the Home Theater while BeoLab 18 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 into 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 receiver to route IR commands from the Theater and Bathroom systems back to the BeoSystem4



AT-UHD-PRO3-88M

Full, high definition video signals start at the Equipment Rack. Sources are connected to the AT-UHD-PRO3-88M 8x8 matrix switcher for distribution throughout the residence. The BeoSystem 4 processor is utilized for optimized sound and vision to the Home Theater and Bathroom. Long distance HDMI and control signal transmission throughout the residence is facilitated by Atlona HDBaseT Extenders.

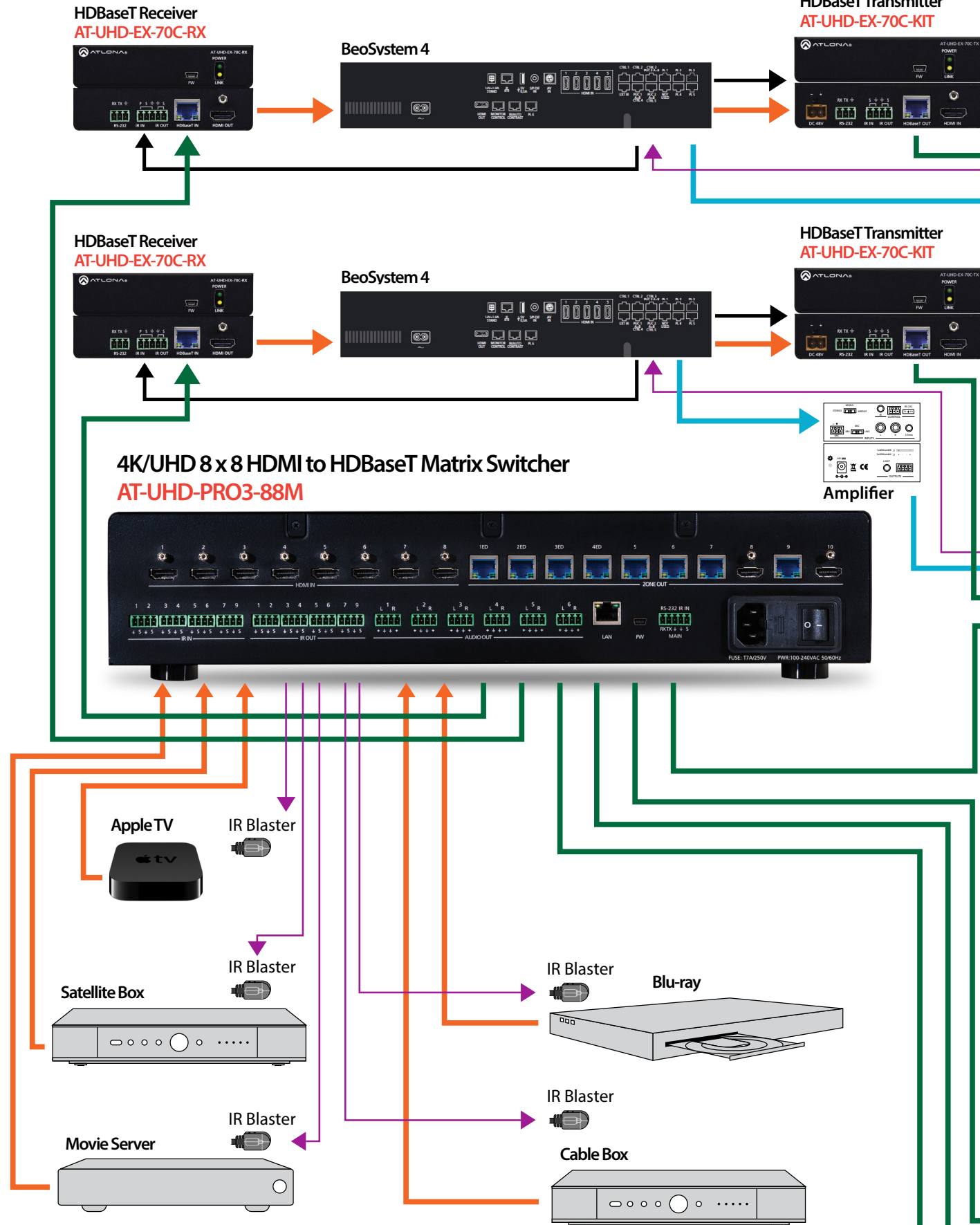


Model	Description	Inputs	Outputs	Benefits
AT-UHD-PRO3-88M	HDMI to HDBaseT™ 8 x 8 Matrix Switcher	8 – HDMI 1 – LAN 1 – RS-232 9 – IR	8 – HDBaseT 2 – HDMI 6 – 2ch Audio 1 – RS-232 8 – IR	Route any HDMI input to any or all HDBaseT outputs with 4K/UHD @ 60Hz capability and HDCP 2.2 compliance. Provides Power over Ethernet for receivers and analog audio breakout. Provides 4x100-meter and 4x70-meter HDBaseT outputs.
AT-UHD-EX-100CE-RX	4K/UHD 100M HDBaseT Receiver with Control	1 – HDBaseT 1 – RS-232 1 – IR	1 – HDMI 1 – RS-232 1 – IR	A/V and control extension up to 328 feet (100 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 100 m with CAT6a/7.
AT-UHD-EX-70C-KIT	4K/UHD 70M HDBaseT Transmitter and Receiver Kit with Control	<b>TX:</b> 1 – HDMI 1 – RS-232 1 – IR  <b>RX:</b> 1 – HDBaseT 1 – RS-232 1 – IR	<b>TX:</b> 1 – HDBaseT 1 – RS-232 1 – IR  <b>RX:</b> 1 – HDMI 1 – RS-232 1 – IR	A/V and control extension up to 230 feet (70 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 40 m with CAT6a/7; 1080P extension up to 70 m with CAT 6a/7.
AT-UHD-EX-70C-RX	4K/UHD 70M HDBaseT Receiver with Control	1 – HDBaseT 1 – RS-232 1 – IR	1 – HDMI 1 – RS-232 1 – IR	A/V and control extension up to 230 feet (70 meters). 4K/UHD capability and HDCP 2.2 compliant. Remote power via Power over Ethernet. 4K extension up to 40 m with CAT6a/7; 1080P extension up to 70 m with CAT 6a/7.
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.

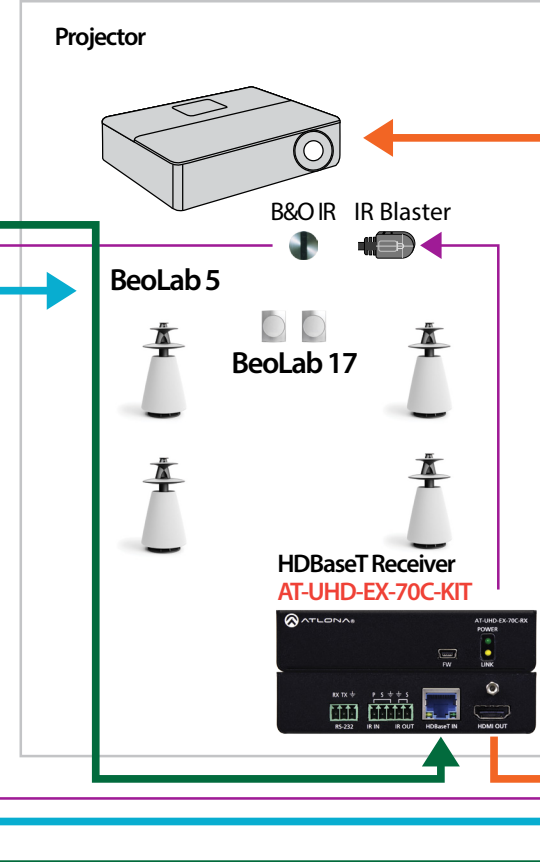


# Large Residential Solution Diagram

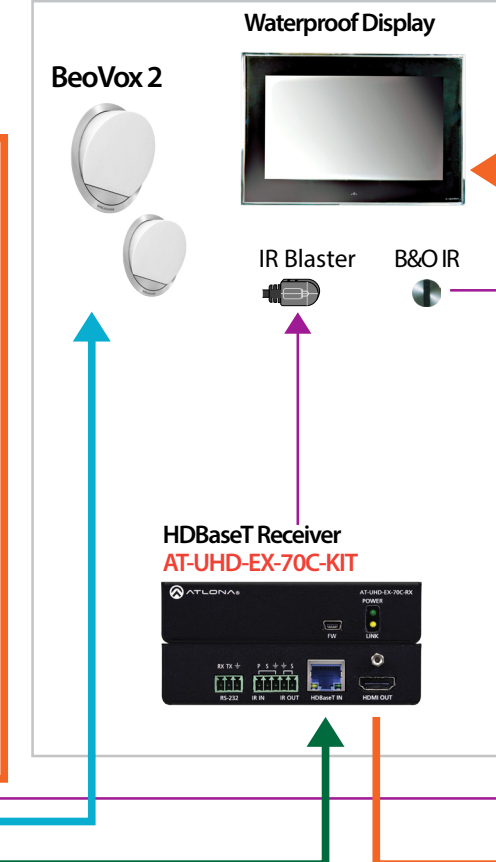
## Equipment Rack



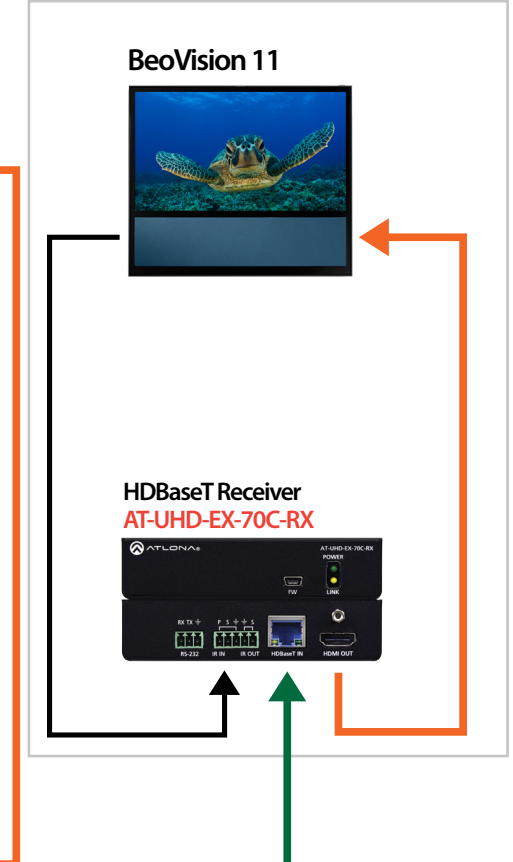
## Home Theater



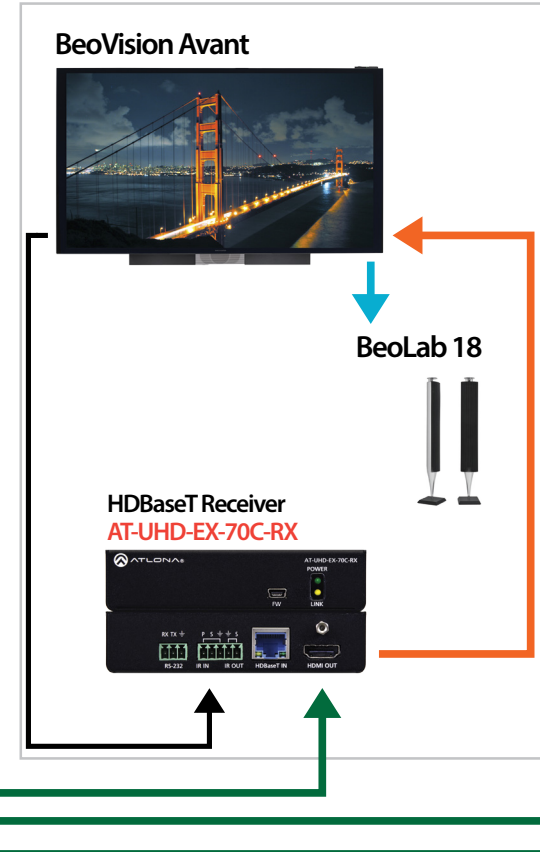
## Bathroom



## Master Bedroom



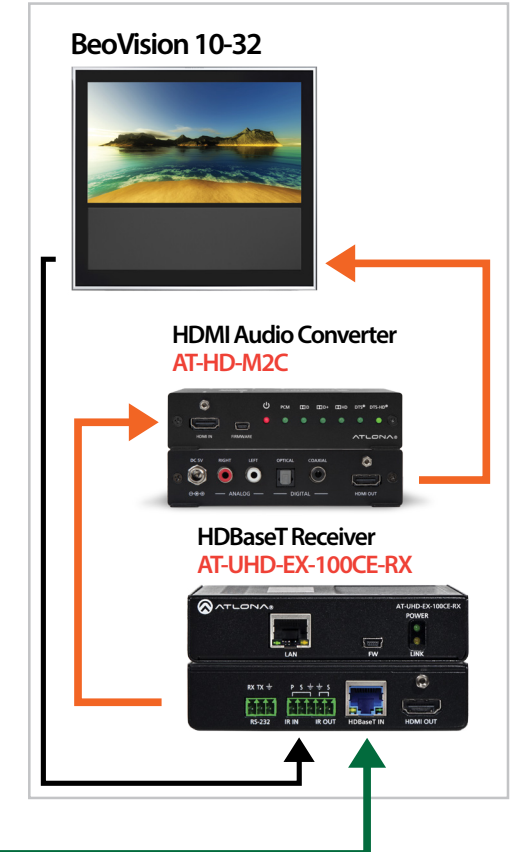
## Living Room



## Second Bedroom



## Kitchen



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

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

View the large residential solution diagram



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## Extending Signal and Control of Remote AV Sources

In these two applications the customer has chosen to place AV sources consisting of a satellite receiver, movie server, Blu-ray player, DVD and an Apple TV in a hidden location. For the second application, there is an additional challenge in that the sources are also placed at some distance away from the TV. Normally, each source requires an HDMI cable and a PUC cable. For all five sources, this would result in a large cable bundle required to be hidden away in a surface-mount cable raceway or in conduit inside a wall.

Multiple HDMI and control cables can be eliminated by placing an Atlona five-input HDMI switcher in the same location as the hidden AV sources. A single HDMI cable replaces five separate runs. For the remote location application, the Extended Distance version of the switcher using HDBaseT is specified to replace five HDMI runs with a single Category cable routed to an Atlona HDBaseT receiver at the TV. The switcher is controlled in the same manner as an HDMI matrix switcher. The same PUC code is used for either switcher: Atlona AT-UHD-SW-52ED.decX.

- Download the PUC file on the TV and setup a matrix under MENU / SETUP / PRODUCT INTEGRATION
- Download PUC files for the sources and setup the matrix sources.



## Parts Needed

- Atlona AT-UHD-SW-52 (Includes power supply) Part #8780341 or AT-UHD-SW-52ED (Includes power supply) Part #8780353
- Atlona At-UHD-EX 100CE-RX HDBaseT receiver Part #8780347
- Atlona PUC cable AT-BO-RJ45-UHD-1MIR Part #8780339
- IR extender kit (See below for example found from an online source)
- (5) Bang & Olufsen IR blasters with 3.5mm mini jack (if not included in IR extender kit) Part #8330352



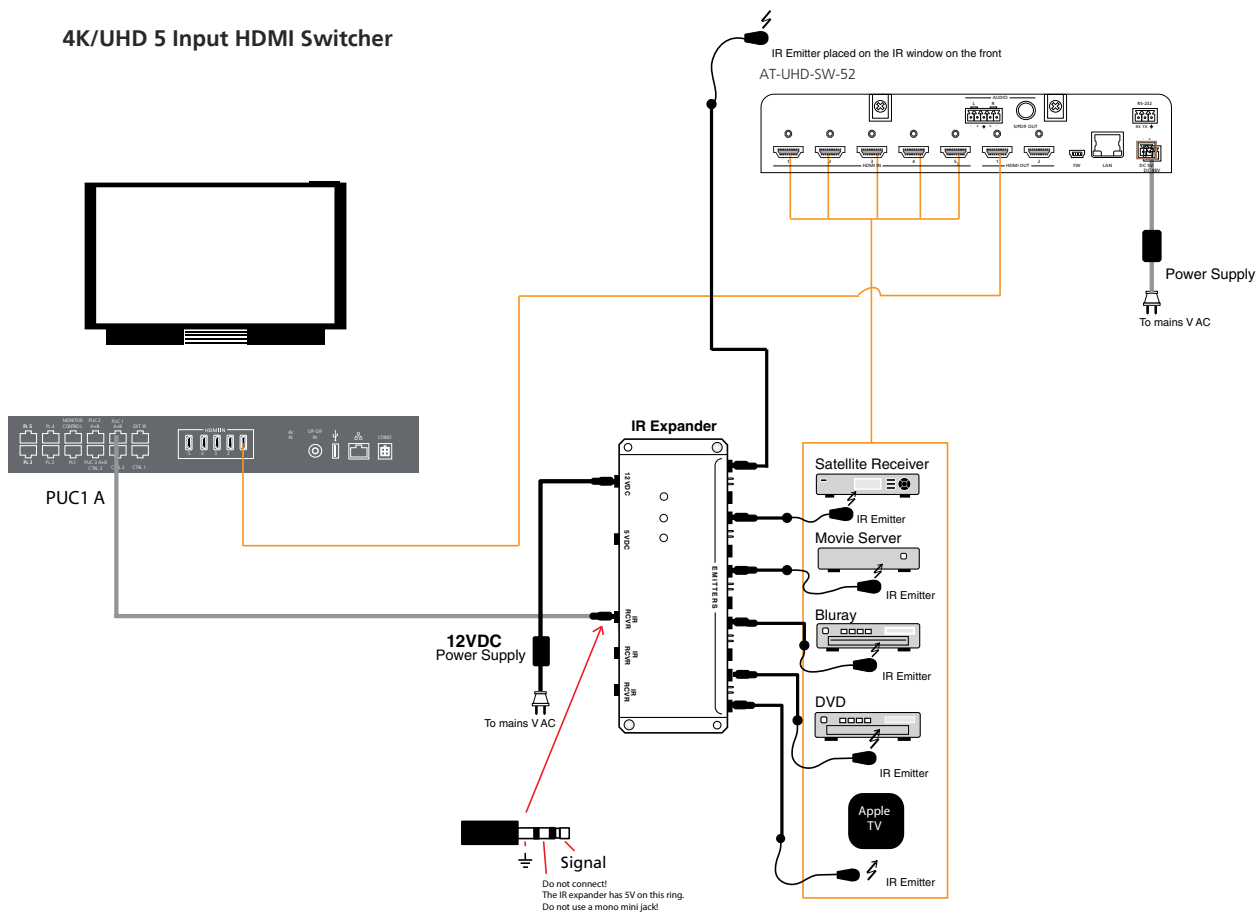
AT-UHD-SW-52ED



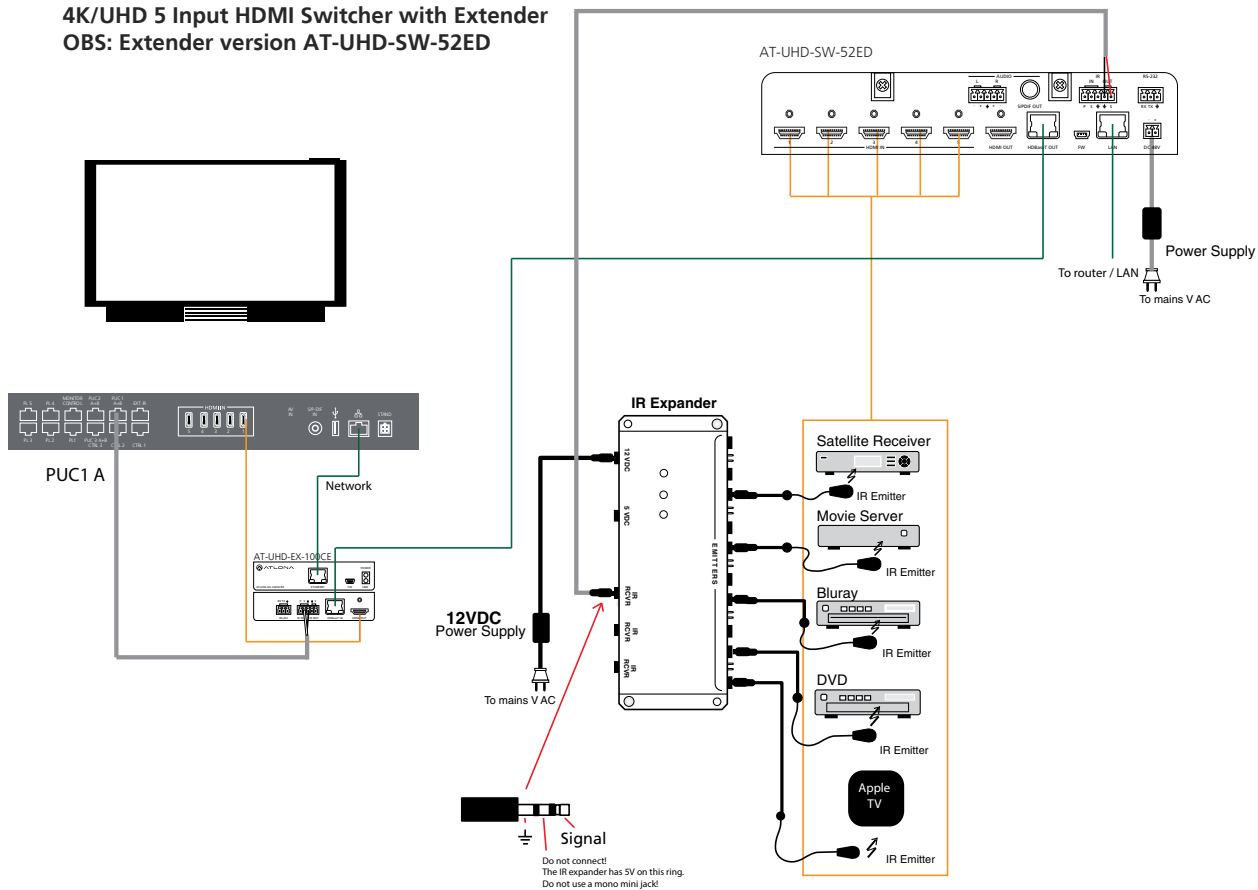
AT-UHD-EX-100CE-RX

The AT-UHD-SW-52 and AT-UHD-SW-52ED support up to HDCP 1.4 and do not support HDCP 2.2 devices.

### 4K/UHD 5 Input HDMI Switcher



### 4K/UHD 5 Input HDMI Switcher with Extender OBS: Extender version AT-UHD-SW-52ED



The AT-UHD-SW-52 and AT-UHD-SW-52ED support up to HDCP 1.4 and do not support HDCP 2.2 devices.

# 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

<b>HDMI Switchers</b>	<b>B&amp;O Part #</b>	<b>Description</b>
AT-UHD-V41	8780314	4x1 HDMI SWITCH with 3D, ARC and HEC (HDMI Ethernet Channel)
AT-UHD-SW-52	8780341	4K/UHD, 5-Input HDMI Switcher with Mirrored HDMI Outputs. Supports up to HDCP 1.4
AT-UHD-SW-52ED	8780353	4K/UHD, 5-Input HDMI Switcher with Mirrored HDMI and HDBaseT Outputs and PoE. Supports up to HDCP 1.4
AT-UHD-PRO3-44M	8780342	4K/UHD Dual-Distance 4x4 HDMI to HDBaseT Matrix Switcher with PoE (RECEIVERS OPTIONAL)
AT-UHD-PRO3-66M	8780343	4K/UHD Dual-Distance 6x6 HDMI to HDBaseT Matrix Switcher with PoE (RECEIVERS OPTIONAL)
AT-UHD-PRO3-88M	8780344	4K/UHD Dual-Distance 8x8 HDMI to HDBaseT Matrix Switcher with PoE (RECEIVERS OPTIONAL)
AT-UHD-PRO3-1616M	8780345	4K/UHD Dual-Distance 16x16 HDMI to HDBaseT Matrix Switcher with PoE (RECEIVERS OPTIONAL)
<b>HDMI Extenders</b>	<b>B&amp;O Part #</b>	<b>Description</b>
AT-UHD-EX-70C-KIT	8780348	4K/UHD HDMI Over 70M HDBaseT Transmitter and Receiver with Control and PoE
AT-UHD-EX-70C-RX	8780346	4K/UHD HDMI Over 70M HDBaseT Receiver with Control and PoE
AT-UHD-EX-100CE-KIT	8780349	4K/UHD HDMI Over 100M HDBaseT Transmitter and Receiver with Ethernet, Control and PoE
AT-UHD-EX-100CE-RX	8780347	4K/UHD HDMI Over 100M HDBaseT Receiver with Control and PoE
<b>Converters</b>	<b>B&amp;O Part #</b>	<b>Description</b>
AT-AD2	8780329	Optical/Coaxial Converter
AT-UHD-SYNC	8780338	4K HDMI Emulator/Tester
AT-HD-M2C	8780333	Dolby/DTS to 2CH Down-converter
<b>Accessories</b>		<b>Description</b>
AT-BO-RJ45-UHD-1MIR	8780339	1M RJ45 to Bare Wire IR Cable
AT-IR-CS-TX	8780340	IR Emitter Cable for UHD-EX Extenders and UHD-PRO3 Matrixes
AT-LC-CS-IR-2M	8780350	2 Meter IR 3.5mm Mono Cable to Captive Screw.
AT-IR-CS-RX	8780354	IR Receiver Cable for PoE Extenders
<b>Testing Kit</b>	<b>B&amp;O Part #</b>	<b>Description</b>
KIT-PROHD3	8780331	Testing Kit Includes AT-DIS7-PROHD, AT-HD800, UHD-SYNC, 4 hour battery for monitor and custom carrying case

# REGIONAL & GLOBAL CONTACTS

**Bang & Olufsen Resource page:** [www.atlona.com/Bang-and-Olufsen](http://www.atlona.com/Bang-and-Olufsen)

## Orders

### Europe Dealers

Order through the Bang & Olufsen  
Online Retail Site

### US, Canada and South/Central America

Atlona USA  
US Toll free: +1 877-536-3976  
US: +1 408-962-0515  
Email: [sales@atlona.com](mailto:sales@atlona.com)

### Middle East, Africa

Imago Sonas  
Tel: +45 31-78-03-03  
Email: [sales@imagozonas.dk](mailto:sales@imagozonas.dk)

### Asia

CAS Group International  
Tel: +1 852-3105-1493  
Email: [info@the-casgroup.com](mailto:info@the-casgroup.com)

## Training

Tel: +1 408-962-0515 x166  
Email: [training@atlona.com](mailto:training@atlona.com)

## Technical Support

International: +41-43-508-4321  
US Toll free: +1 877-536-3976  
US: +1 408-962-0515

URL: [www.atlona.com/support/](http://www.atlona.com/support/)

For first level technical support, please contact Imago Sonas (Europe, Middle East, Africa), CAS Group International (Asia Pacific), or Atlona (USA, Canada, Latin America). For second level support, please refer to the following contact details:

Region	Phone	Email	Web
USA, Canada, Latin America	+1 877-536-3976 or +1 408-962-0515	<a href="mailto:support@atlona.com">support@atlona.com</a>	<a href="http://www.atlona.com/support/">www.atlona.com/support/</a>
Europe, Middle East, Africa Asia Pacific	+41-43-508-4321	<a href="mailto:intlsupport@atlona.com">intlsupport@atlona.com</a>	

