



ATLONA.
Connecting Technology

WHITE PAPER

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Large Residential Application Solution

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Consider this residential installation opportunity, your client approaches you and explains that he is renovating a large historic home and desires to have 16 zones of audio and video throughout the home. The first thought that pops into your mind involves a dollar sign and then some excitement, but once that rush of anticipation fades the reality sets in that this could be a tough job and its needs to be done right.



To do this job “right” you will need to consider the challenges that this type of installation will impose. For starters how do you manage 16 zones of A/V? In today's world our signals are mostly digital which means you will need to effectively manage EDID and find a way to play nicely with Hollywood content in the form of HDCP. You can also bet that anytime your working with more than six zones you are going to need to distribute signals beyond the distance limitations of conventional HDMI cabling. You will likely also run into displays of different resolutions, conflicting audio formats between zones, wiring challenges incumbent to a historic project and of course room aesthetics.

The job will be challenging but rest assured Atlona technologies has the solutions to these challenges. For large residential installation such as this one Atlona offers matrix switchers in two purposeful configurations of 8x8 and 16x16. A matrix switcher is a device that allows you to input a signal from multiple different sources such as cable boxes, satellite receivers, Blu-ray players, media players, music servers and more and route those signals in any configuration to all the different displays located around the home. The matrix switch solves the challenge of managing multiple sources and delivering content in your large residential application.

Additionally the matrix switch has built-in intelligence to manage display identification and digital media copyright issues that can often plague an A/V network. You may have heard of the terms EDID (Extended Display Identification Data) and HDCP (High-Bandwidth Digital Content Protection). Atlona switchers have three methods for managing EDID. First they offer an AUTO management feature that outputs the highest common audio format and video resolution that all connected zones can support. Second you can choose from twelve commonly required EDID pre-sets supplied in the built-in Library. Finally with an Atlona matrix switch you have the unique ability to learn in an EDID and assign it to any of the input ports. Atlona matrix switchers are also HDCP compliant, which means you will never have content protection issues on a home network when using an Atlona switcher.



So how does a matrix switch solve the issue of sending an A/V signal over long distance?

The answer is that the matrix switch must have integrated HDBaseT distribution ports. Ok, so what is HDBaseT and why does it solve my issue. HDBaseT is a connectivity standard that allows uncompressed HD multimedia content to be routed over long distance on category cable. In fact, in some solutions, HDBaseT not only works for audio and video signals but will allow for control signals, Ethernet and power to be routed over the same category cable as well! When paired with CAT 5/6/6A/7 at 1080p will reach 100m with a 36bit signal. CAT6A is certainly the best cable to ensure these results with wider bandwidth and maintains strand geometry because of the internal spline holding the 4 twisted pairs in place. An HDBaseT capable matrix switch is ideal for larger residential installations because it enables an integrator to pull only one cable to each display location. Furthermore with distance maximized at 328 feet you will be able to reach even the furthest corner of a 16-zone residence.

At the display the HDBaseT capable matrix switch works in tandem with an HDBaseT receiver called the AT-PRO2HDREC. This receiver extends IR, RS-232, audio and video content between sources and displays. The receiver also offers pass through support of up to 1080p or 1920x1200, 3D, 2Channel and Multi-channel audio. The HDBaseT HDMI Extender over Category Cable allows almost any audio/visual system set up to be used. One last feature your sure to love is the compact format of this receiver unit. The receiver is small enough to fit behind a display making for convenient installation that is free of cable and equipment clutter.

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In a multi-zoned installation it is common to find some zones that require two-channels of audio, that's a simple left and right speaker, while other zones like a theater or living room may be setup for surround sound. In this mixed audio environment when two zones with different audio configurations display the same source at the same time, lets say a Blu-ray player for example, the Blu-ray player will default to the highest common audio format. In this case it will be 2-channel audio. While this will sound perfect on the bedroom display it will not sound so great on the 5 speakers in the theater. To resolve this issue Atлона offers a product called the AT-HD-M2C which will convert and down-mix the audio signal in a 2-channel zone allowing for perfect sound in that location and ensuring that the theater will remain in top form utilizing all surround speakers. The AT-HD-M2C is an ideal product to pair with a matrix switcher.



Since the matrix switch allows a single source to be viewed in multiple locations it is worth noting that the matrix model can reduce the total number of cable or satellite boxes needed in an installation. This will be important to the home owner as this will reduce the number of set top boxes that he/she will need to rent on a monthly schedule from their content provider.

The AT-PRO2HD88M and AT-PRO2HD1616M matrix switchers route sources to displays so devices can be shared in multiple spaces simultaneously. Atlona's PRO2HD matrix switchers offer the largest matrices of the PRO family, with HDBaseT signal transmission over long distances. Advanced IR and RS-232 control enable simpler system design and integration. Easy-to-pull, field-terminable cable means easier installs for large and complex projects. Combining the industry's most powerful technologies with advanced AV routing, the Pro-Series distributes uncompressed digital AV over standard, twisted pair cabling sending signals up to 328ft. Now you can distribute content from virtually any source like Blu-Ray players, computers and laptops to any display or projector in multiform environments with confidence.



The PRO2HD series robust feature set is ideal for any commercial or residential application from conference rooms to living rooms alike. Learn how the PRO2HD series can transform your next job into a state-of-the-art application supported by dependable HD signal routing.

Specifications		
Bandwidth	6.75Gbps	
Ports	AT-PRO2HD1616M	AT-PRO2HD88M
Video input	16 x HDMI	8 x HDMI
Video output	16 x RJ45	8 x RJ45
IR in	17 x IR 3.5 mm	9 x IR 3.5 mm
IR out	17 x IR 3.5 mm	9 x IR 3.5 mm
Firmware update	1 x USB (type B)	
RS-232	1 x 9-pin D-Sub	
Power Consumption	125 W	60 W
Weight	21.61 lb (9.8 kg)	18.45 lb (8.37 kg)
Audio	Passes up to Dolby TrueHD and DTS-HD Master Audio	
Distance	up to 328 ft (100 m)	
Resolution	Video: up to 1080p@60Hz Vesa: up to 1920x1200	
Dimensions (H x W x D)	6.93 x 18.98 x 14.27 in. (176 x 482 x 362 mm)	
Rack Size	4U 19 in. standard electronics rack	
Temperature	operating 32°F to 104°F (0°C to 40°C)	storage -4°F to 140°F (-20°C to 60°C)
Certifications	CE, FCC, RoHS (power supplies are UL certified)	

