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SENDING ALL THE RIGHT SIGNALS

Application Report

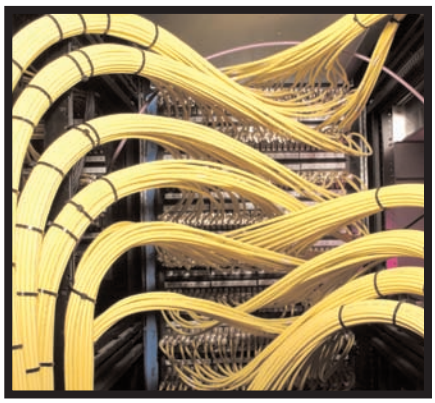
AR 2/07

Re/Max's corporate office facility houses a high-speed, high-bandwidth data communications network, VoIP, multimedia and professional broadcast systems – all supported by Belden IBDN® and specialty cables.

RE/MAX International's New Denver Headquarters Features the Belden IBDN Multi-Gigabit Cabling System

Founded in 1973, RE/MAX International, Inc. has evolved into the world's leading real estate franchise networks, with over 120,000 agents operating in 6,500 offices in more than 65 countries around the globe. The award-winning firm recently opened the doors of its new corporate headquarters building in Denver, Colorado – a world class facility housing a world class technology infrastructure. The 256,000-sq-ft structure is comprised of ten floors of office space, an entry lobby, training center and fully equipped, professional broadcast studio, as well as a five-level enclosed parking structure.

The stunning new headquarters building offers a prime example of contemporary architecture and design, both inside and out. It also houses a leading edge cabling infrastructure built to support the most advanced technology and communications systems available in the world today – all supported by Belden's state-of-the-art signal transmission solutions.



In the RE/MAX Satellite Network TV studio, Belden IBDN System 4800LX Beyond Category 6 networking cables have been installed to link the equipment room with the production studios and post-production editing rooms.

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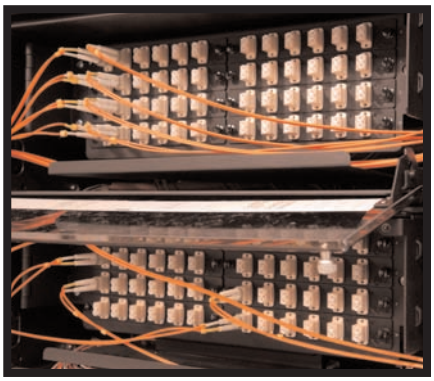
The wide array of production equipment in the broadcast studio is housed in sturdy floor-mounted racks, a key component of Belden's end-to-end Cable Management Solution.

RE/MAX wanted "top notch" communications systems. So, they implemented VoIP and "mandated the selection of top-tier products and fully certified installers."

Building for Today….and the Future

To coordinate and specify the building's telecommunications, electrical, mechanical, fire alarm, CATV, A/V and security systems, the RE/MAX building's award winning designer, Barber Architecture, brought in Swanson Rink, Inc., a leading Denver-based engineering firm. James Embury (RCDD), Swanson Rink's Manager of IT Design, served as project manager to provide oversight and construction administration and ensure the quality and coordination of the project. Avant Datacomm Solutions of Golden, Colorado, a Belden® CSV (Certified System Vendor), was invited to join the team to provide the cabling system installation.

According to Embury, "This was a total team effort from start to finish, with all participants working closely together to ensure a successful installation. Since RE/MAX is a technology leader in real estate, its corporate management wanted to be sure that the networking and other communications systems were also top notch. That is why, for example, they chose to implement a VoIP system right at the start. And they mandated the selection of top-tier products and fully certified installers, knowing this was the best way to ensure superior performance in meeting current needs, as well as being ready to meet ambitious needs for the future."



Belden IBDN® Fiber*Express*® System cables and Optimax® connectors provide the RE/MAX building's fiber optic backbone. The fiber optic patch panels shown here are installed in the building's MDF.

Another key to the smooth, trouble-free installation of the communications systems was Swanson Rink's use of a specialized IT software application, which enables a 3D "collision check" drawing simulating an above-the-ceiling pilot test to prevent any collision of cable trays with other building system conduits.

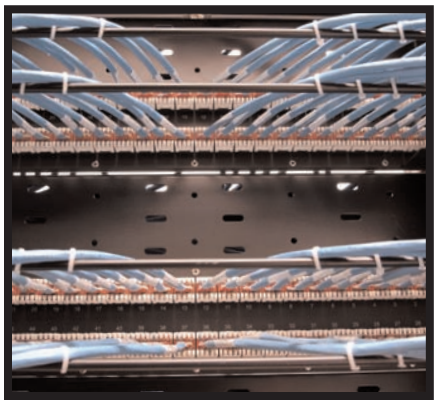
An End-to-End Belden® Installation

Installing the entire cabling infrastructure of the new facility took just under a year. Now complete, the IT and communications framework supports:

- A centralized Data Center
- Enterprise-wide Voice over IP (VoIP) service
- Multiple auditoriums, conference and meeting rooms equipped with A/V and multimedia capabilities
- A complete CCTV security and surveillance system
- A fire alarm system and a biometric access control security system
- A professional CATV and broadcast studio

Commenting on the decision to deploy Belden cables throughout the new facility, Shawn Haggerty, president of Avant Datacomm Solutions, notes: "Avant Datacomm has worked with RE/MAX over several years and introduced the firm to Belden's products and quality standards. So it was no surprise when RE/MAX and Swanson Rink specified Belden-brand cabling throughout – with no substitutions or alternatives allowed. Every system in the new facility, including the entire cabling infrastructure, affirms the fact that RE/MAX is an enterprise technology leader."

When the installation was complete, Avant Datacomm had deployed over 2,000 Belden, copper-based and optical fiber cables for networking and connectivity (2,200 drops), along with many components of Belden's Cable Management solution. In addition, all of the audio/video, broadcasting, CATV, CCTV, security and fire alarm systems had been installed, using a wide assortment of Belden Brilliance® and New Generation® specialty electronic cables.



The blue-jacketed cables shown here are terminated to Belden IBDN GigaFlex Patch Panels in one of building's 13 IDF rooms. The Belden patch panels are built on patented technology designed to deliver exceptionally stable signal transmission performance.

Installing the Multi-Gigabit Network Infrastructure

The Belden IBDN® Fiber*Express*® System was specified for the building's IT backbone. This optical fiber riser and distribution system offers high bandwidth and transmission speed, as well as the potential for network growth, extended reach, fault tolerance and optimum data security in supporting multi-Gigabit protocols.

For RE/MAX's enterprise data communications and VoIP systems, Avant Datacomm deployed the Belden IBDN System 4800LX, which offers a 4.8 Gb/s guaranteed data rate. This copper-based, Beyond Category 6 structured cabling solution is also designed and engineered to meet the ultra-high-speed, high-bandwidth requirements of multi-Gigabit networking. In fact, the IBDN System 4800LX is the industry's first 300 MHz system, far exceeding all TIA/EIA Category 6 specifications.

The Belden cables deployed in the 4800LX System are GigaFlex UTP cables, a proven solution offering consistently high channel performance, with large margins over recognized industry standards. The GigaFlex Modules (punch-down UTP connectors) are based on Belden's patented Encapsulated Lead Frame technology which delivers long-term reliability and extremely stable transmission performance. This is because the design of the GigaFlex Module allows signals to pass virtually unchanged through the connector, thereby maintaining signal strength and integrity.

In addition to the main, centrally-located Data Center, each floor of office space houses a telecommunications room from which the horizontal cables are routed to individual work-stations. Recognizing that proper and efficient cable management is essential to the quality and reliability of enterprise network performance, Avant Datacomm also installed Belden Cable Management components, including a large number of equipment racks, vertical wire managers, horizontal channels, and cable management accessories.

When installation of the Belden IBDN System 4800LX networking system was completed, the installer conducted testing on its performance, using Fluke test equipment, and subsequently issued RE/MAX a Belden Channel Category 6, 25-Year Warranty.

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RE/MAX required a robust, high-bandwidth infrastructure to support its internal IT and communications network, as well as a complete broadcasting network to provide programming services to RE/MAX franchisees around the globe.

"We knew that with Belden® products in our data center and wiring closets, we would have a worry-free environment."

Professional Quality Broadcast and Audio/Video

Since RE/MAX International serves a vast global network of franchisees, corporate management specified that, in addition to high-speed data services, the new facility had to incorporate a sophisticated professional broadcast studio, from which an array of programming services are fed to Echostar via a fiber optic connection. The company's programming includes certification, educational and training courses related to real estate and computer technology, sales and marketing tools, and access to the RE/MAX Convention and various events throughout the year.

Belden Brilliance cables are the mainstay of the state-of-the-art broadcast and A/V systems, and a variety of Belden New Generation cables were installed to support the fire alarm, CCTV and access control/security systems.

Keith Wyllie, Senior Manager of IT Support Services for RE/MAX notes: "To ensure the performance and reliability of our broadcast facility and other A/V applications across the enterprise, all of these systems utilize the same Belden cabling products that have earned distinction in the professional audio/video and broadcast industry. And, we knew that with Belden products in our data center and wiring closets, we would have a worry-free environment."

Wyllie confirmed that the multi-Gigabit networking system and other signal transmission systems throughout the new corporate headquarters building will indeed meet the company's current and future needs. "We wanted a world class building, and that meant everything inside had to be world class. That's why we chose Belden for cabling materials in our specs," he concluded.

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