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Because of the sheer volume of AES audio cable needed and the physical limitations of the cable pathways, Dome used Belden's **DigiTruck® Sub-miniature Coax cable**.



Dome Productions Equips Advanced Mobile Digital Broadcast Truck with Belden® Brilliance® A/V Cabling

Dome Productions in Toronto, Canada, is one of North America's leading providers of mobile production facilities. The firm recently launched Trillium, a turnkey mobile production studio equipped to provide complete turnkey HDTV production and transmission services on a contract basis to clients covering professional sporting events, as well as concerts, awards shows and other high-profile public performances.

Trillium is the eighth mobile in Dome's fleet and the third high definition, multi-format mobile production studio designed by the company over a three-year period. "With each launch, we fine-tune and improve the design, equipment and capabilities of our mobiles based on experience with preceding trucks and the changing needs of clients and new markets," notes Curtis Skinner, manager of Dome Productions Engineering Services.



A total of 371,000 feet of Brilliance A/V cables were deployed in Dome's mobile production studio — including 1505A Precision Video coax (blue, yellow and green) and 1855A Miniature Video coax (purple).

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Cabling the Mobile Broadcast Infrastructure

According to Skinner, building and equipping the trailer took nine months, with three months of that devoted to cable installation and a final month for systems configuration and testing. When the design and engineering plans were completed, Dome selected Toronto-based FCI Technical Installations Inc. for the broadcast system installation. FCI serves major broadcast networks, as well as smaller production and post-production facilities. Over the past decade, the company has installed all of Dome's production fleet and also provided pre-built and on-site installation services for the Bell ExpressVu satellite network and for various broadcasters at the past six Olympic games.

“Our appreciation of Belden products begins and ends with quality and consistency... Belden cables are the ‘mortar’ of our A/V systems.”

For the hundreds of thousands of feet of Brilliance® A/V cabling required to support Trillium's complex applications, Dome turned to Belden®. As a long-time Belden customer, there was no contest, notes Skinner. “We have Belden cables in all of our mobile trucks because transmission failure is simply not an option in this industry. The fact that all of their cables are thoroughly tested gives us an added measure of confidence. With Belden, there are no bad reels. That's the kind of consistent quality and reliability we and our clients need.”

Brian FitzGerald, who heads up FCI Technical Installations concurs: “Our appreciation of Belden products begins and ends with quality and consistency. Having doubts about the integrity of the cable plant after months of installation would be like doubting the quality of your mortar after your brick walls are finished – it would keep you up at night. Belden cables are the ‘mortar’ of our A/V systems.”

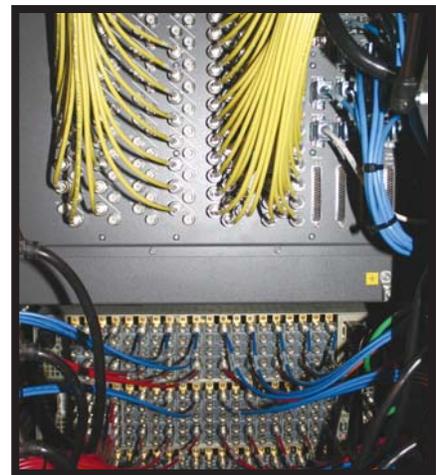
Trillium uses Belden Brilliance DigiTruck® (179DT) cables because they weigh 60% less than standard Mini RG-59/U type cables; they also require 40% less space.

Inside the Mobile Production Truck

The entire digital production and transmission studio is housed within an over-the-road trailer truck 53-ft long by 8 ft 6 inches wide and 13 ft 2 inches high. A 5-ft expansion side extends over nearly its entire length. Dome's newest mobiles are capable of supporting standard and high definition 1080i, 720p and 24p HD formats in traditional 4:3 for standard definition, or wide screen 16:9 aspect ratios. In addition, Trillium is fully equipped to provide 5:1 surround sound.

The trailer layout includes a unique back deck in the audio room to allow for easy add-on of additional gear required for larger productions. Functional spaces inside the trailer include distinct areas for audio, production, VTR and VIDEO/TX.

The mobile has a production monitor wall that utilizes an Evertz 10 output virtual monitor driver system and 47 conventional color monitors, thereby providing the production team with versatility in the size and number of monitors available for use. And, as one might imagine, a multi-format HDTV digital mobile facility requires an extensive array of electronic equipment, including video tape recorders, cameras and lenses, audio console, intercom/communications equipment, routers, servers, switchers, microphones, interconnect and other system equipment.

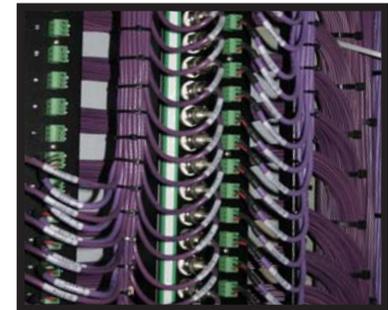


Belden sweep tests and certifies its professional video coax cables to 4.5 GHz to ensure superior RL performance, even at high frequencies.



Dome Productions' newest mobile units are fully equipped to support standard and high definition 1080i, 720p and 24p HDTV formats.

Belden 1855A Miniature coax cables and 179DT DigiTruck Sub-miniature coaxes are seen here on the back side of the audio board, but they are equally appropriate for video production.



According to Skinner, the biggest challenge in designing and installing a full-service mobile production truck is interior space and the over-the-road weight constraint of no more than 80,000 lbs. The space has to accommodate all of the cabling, production and transmission equipment, a high-powered air conditioning system, and workspace for a crew of up to 25 people. "Everything must be well thought-out to be clean, compact and super-efficient," he notes. "So you have to think creatively. For example, we utilized the AC return air ducts as conduit for some of the cabling."

Dome Productions has the only HD mobile fleet in North America to provide complete turnkey transmission solutions, with each mobile equipped with rack-mounted HD transmission encoders, decoders and modulators. Typically, Dome clients contract for the use of the mobile alone and provide their own production and transmission crew. A few ask Dome to source camera and production crews.

"A growing number of our clients are broadcasting in the high definition format, especially for sporting events, which are in the forefront of this trend. With a limited number of turnkey mobile units out there, our business is growing rapidly. To ensure reliable performance, we conduct extensive testing of the system and do our own certification before contracting the unit out to clients," says Skinner.

Belden® Brilliance® Cables Deployed

Approximately 371,000 feet of Belden Brilliance A/V cables have been installed in Dome Productions' newest mobile digital production truck. Specific products and quantities include:

- 1855A – Miniature Coaxial Video Cable (150,000 ft)
- 1505A – Precision Video Coaxial Cable (57,000 ft)
- 179DT – DigiTruck® Sub-Miniature Coax for Broadcast Mobile Trucks (35,000 ft)
- 9451 – Line Level Analog Audio Cable (78,000 ft)
- 1857A – RG-11/U Type Video Triax Cable (14,000 ft)
- 8777 – Shielded Multi-Pair Snake Cable (1,000 ft)
- 1583R – Cat 5e UTP Cable for AES/EBU Digital Audio (36,000 ft)

One major differentiator of Belden Brilliance professional video cables is that Belden now sweep tests and certifies these video coax cables to 4.5 GHz to ensure superior return loss performance, even at higher frequencies. To date, Belden is the only cable manufacturer to offer this advantage.

Another innovation in Trillium is the use of Belden Brilliance DigiTruck (179DT) cables, a lightweight, crush-resistant precision video coax designed specifically for use in mobile broadcast trucks where load-weight and space are prime concerns. DigiTruck cables deliver high quality performance in analog, SDI, HDTV and AES/EBU digital audio transmissions.

On installing the DT cables, FCI Tech's FitzGerald notes: "For the first time, we used DigiTruck coax for all the AES audio to and from the router. Because of the sheer volume of audio cable in and out of the patchfields, and the physical limitations of the cable pathways, this ultra-tiny coax significantly increased capacity, in addition to its considerable weight savings."

The well-equipped audio station is where engineers mix the sound. Because of the sheer volume of audio cables required on the truck, the use of Belden's ultra-small DigiTruck® cabling helped Dome meet capacity, space and weight requirements.

“Knowing that we have the best cabling infrastructure in the industry gives us one less thing to worry about.”



Mobiles Have a Busy Schedule!

It soon became apparent that the marketplace was eager for another turnkey HD production solution. From its inaugural event covering NBA Toronto Raptors basketball, Trillium was immediately contracted to cover a variety of high-profile events in a wide range of locations: NHL hockey in Montreal and Ottawa, Major League Baseball in New York, Toronto and Chicago, and a Coldplay concert in Toronto.

In the same two-week period, Dome's other HD mobile trucks – which also use Belden® Brilliance® cables – were on the road covering the JUNOs (Canada's most prestigious music awards) in Halifax, the PGA Masters Golf Tournament in Augusta, Georgia, NHL hockey in Toronto, Montreal and Tampa Bay, and MLB in Boston, Toronto, New York, Miami and Atlanta.

“At Dome Productions, we are very flexible and client focused. We aim to be responsive to every client's specific needs and special requests. Knowing that we have the best cabling infrastructure in the industry gives us one less thing to worry about,” concludes Skinner.

9451 Line Level
Analog Audio Cable

