



**Application ideally suited for:**

- Point to Multi-Point Venues
- Media and Content Hubs
- Service Carrier Exchange Points
- Wireless Towers
- Stadiums
- Enterprise Locations
- Financial Exchanges
- Data Centers

Large Telecoms

- Utilizing a fiber-based solution for media aggregation and distribution via dedicated Ethernet and DWDM network infrastructure.

Broadcasters

- Securing dark fiber or wavelength-based transport and managing their own primary distribution media network.

**Features & Benefits**

- Media Links transport equipment deployed in this type of application minimizes bandwidth usage and provides real-time dissemination of a continuous media stream from source to multiple destinations and back again.

**Related Products**

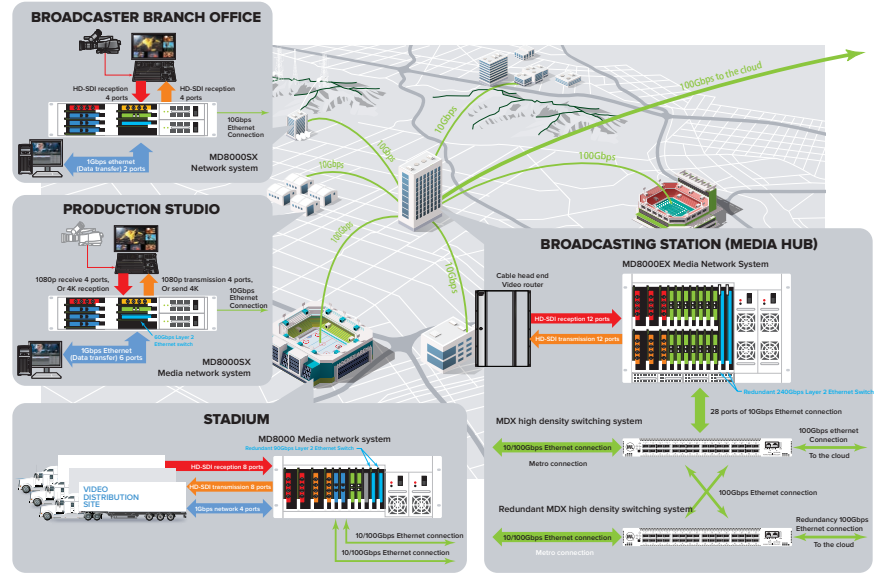
MD8000SX, MD8000, MD8000EX and MD8000-100G IP Media Gateways  
 MDX-100G Series of Core/Aggregation Switches  
 MDP3000 Series of compact, portable IP Media Gateways  
 ProMD EMS 2.0 Software

**APPLICATION NOTE**

## Metropolitan Distribution Networks

The Media Links high-density Media over IP Platform is ideally suited for large-scale Metropolitan Distribution Networks

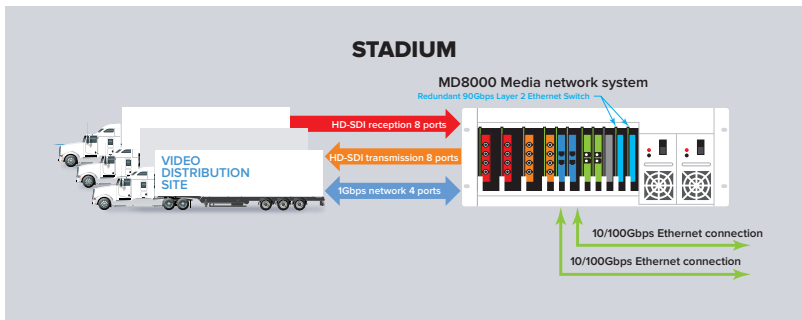
Data and content drive business and revenue opportunities – and Media Links is in the business of delivering, receiving, and transporting rich content, whether it's data, video, audio or a combination of all three. Media Links supports providers of high-performance networks for bandwidth intensive applications by powering the all-digital switching and transport infrastructures for a wide range of content.



The Media Links media over IP transport solutions ensure that many different services can be distributed over a common 10GbE IP / Ethernet / DWDM network infrastructure. This results in a reliable and reduced cost of distributing content over a metropolitan area (as well as nationally if required), and ensuring distribution is in a highly scalable manner.

In the application shown above, 22 last mile / edge customers, a media hub, a broadcast affiliate, a production studio, and a stadium venue are supported on a single IP/Ethernet network. 4K/HD/SDI signals and other content are switched simultaneously.

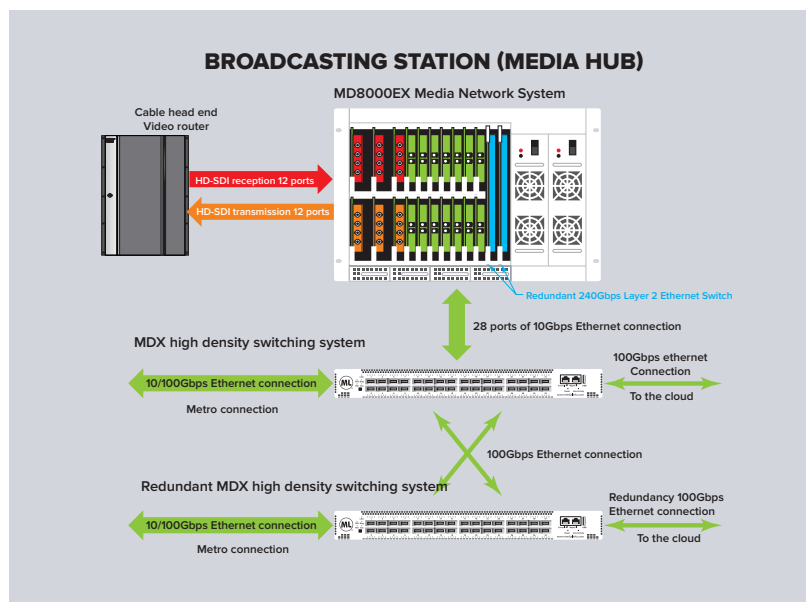
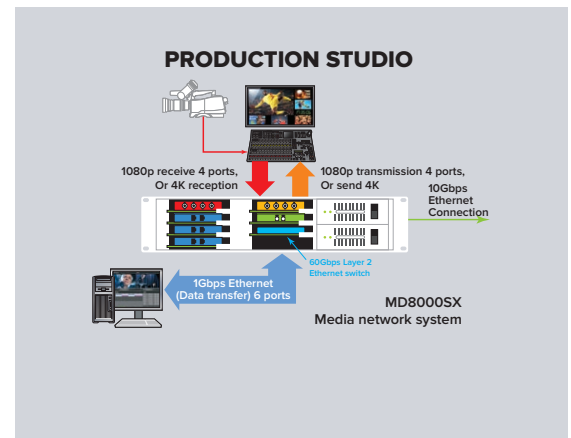
At the stadium, several broadcasters are utilizing Mobile Sports Vans to generate content from sporting events occurring within a metropolitan area. Media Links MD8000 platforms are deployed within the Venue's centrally located Control Room or at the telecommunications demarcation point. The MD8000 provides the gateway for multimedia services and is typically interconnected with high speed IP interfaces and remotely monitored and managed by the Network Operations Center. Files and video clips recorded locally at the stadium can also be reliably transferred to the Production Studio over IP data connections. Traffic prioritization ensures that background file transfers can be assigned a lower priority than video or audio traffic.



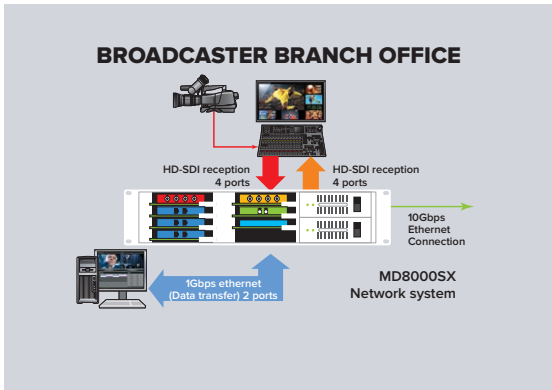
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Content captured at the stadium or other event locations is accessible to the production studio via the metropolitan or regional network interconnects. The MD8000SX media network system at the production studio integrates with the entire IP transport network and provides hitless and seamless switching of 4K and 1080P content for flawless video transport.

The service provider's media hub centralizes the entire metropolitan distribution application. The hub essentially supports the operation of sending and receiving packets of content efficiently and without any loss via the MD8000EX Media Network System with support of a video router, and MDX core switching systems (standard and redundant). This ensures high quality transport of video and other content services to and from the production studio and broadcast affiliate(s).



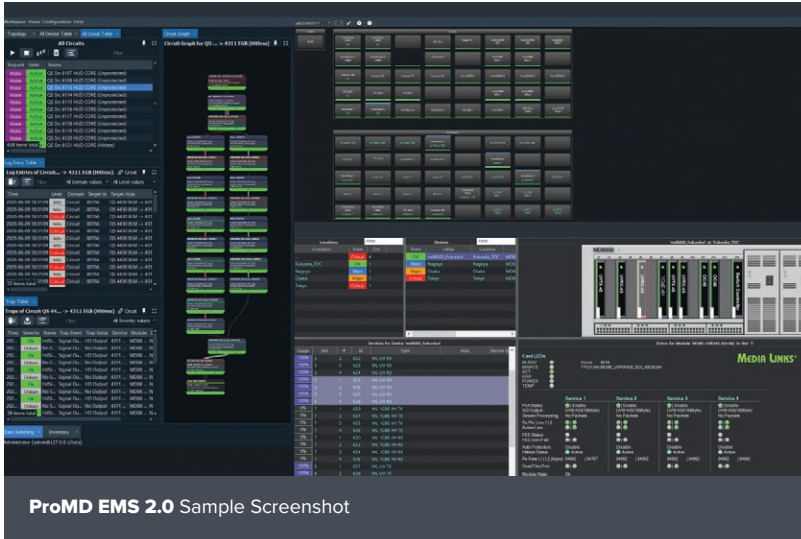
In many applications, Broadcasters and Service Providers are required to support both legacy and next generation network footprints. Media Links technology provides a bridge to the future allowing for new and old customers to seamlessly share content across the network. The MD8000EX Media Links chassis supports 24-slots in a 7 RU frame. The MDX acts as a central media hub supporting per stream IP switching, as well as providing multiple native 10Gb, 40Gb, and 100G Ethernet uplinks direct to the high-speed, core network backbone.



The MD8000SX last mile network solutions are installed at various broadcast affiliates throughout the metropolitan area. These units receive and transmit content from the central media hub via the IP network for distribution to end-user customers, whether they are viewing content on televisions, computers, or mobile devices. The MD8000SX maximizes the edge and last mile network connectivity due in part to its frugal use of space and power, as well as its ability to handle signals natively or with fully-integrated, internal JPEG or H.264 compression.

The Media Links Enhanced Management Software ensures the central media hub has full visibility of all edge locations over the entire network at all times. This powerful SNMP-based application monitors the entire network, polling and receiving alerts and notifications in real-time to rapidly identify circuit and equipment issues before they become service affecting. The Media Links ProMD EMS provisions circuits, creates backup routes, and manages bandwidth.

Together, the Media Links hardware and software system components operate as a coherent and seamless system to support a mixed-mode configuration and allow network providers the advantage of transmitting and receiving different signals (4K/HD/SD-SDI, audio, ASI, data) simultaneously. This technology allows for ultra-long transmission distances and serves as an extremely practical and cost-effective method to consolidate video, audio and data content elements onto a single network. The MD8000 helps service providers to fully realize the vision of using IP/Ethernet as the preferred content distribution networking platform.



Broadcast-quality video with millisecond-level latency is achievable and a large variety of signal sources can be inserted onto the IP platform at any given last mile / edge site and sent to the central media hub as well as all interconnected facilities. This centralized solution also eliminates the need for providers to operate separate and technically diverse networks. Media Links provides a common platform for all connected venues, broadcast centers, video distribution facilities, and more to accommodate all signal requirements whether 4K/3G/HD/SD-SDI, DVB-ASI, audio or data. It is the definition of 'Next Generation' for video transmission!

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